# LONG DISTANCE LONG-TERM ATHLETES DEVELOPMENT AND TRAINING METHODS IN WOLISO TOWN ATHLETES CLUB


SPORT ACADEMY

DEPARTMENT OF SPORT SCIENC

BY: ASEGID KASA BEGASHAWU

A RESEARCH SUBMITTED TO JIMMA UNIVERSITY SPORTACADEMY DEPARTMENT OF SPORT SCIENCE FOR PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTER'S DEGREE IN ATHLETICS SCIENCE OF COACHING

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# APPROVAL SHEET

## JIMMA UNIVERSITY SPORT ACADEMY

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As members of the examining board of the final M Sc. open defense we certify that we have read and evaluated the thesis prepared by Asegid Kasa entitled: long distance long term athlete development and training methodology in woliso town athlete club we recommended that it could be accepted as fulfilling the thesis requirement for the degree of master of science in athletic coaching specialization.

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As member of the examining board of the final M Sc. open defense, we certify that we have read and evaluated the thesis prepared by Asegid Kasa and examine the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirement for the degree of Master of Science in coaching athletics specialization.

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## DECLARATION

By my signature below, I declared and affirm that this thesis is my own work. I have followed all ethical and technical principles of scholar ship in the preparation, data collection data analysis and completion of this thesis. Any scholar matter that is included in the thesis has been given recognition through citation.

Name: Asegid Kasa Begashawu

Signature _____

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# Table of Contents

page

List of Table

Content

Page_Toc167555836

List of figure page

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# BIOGRAPHICAL SKETCH

The author was born on February 19, 1979, E.C., in Oromia Regional State, West Showa Zone, and Jibat Woreda. He attended his elementary education grade (1-6 Geja Tekilehaymanot, 7-10 Shenen) and 11-12 Guder secondary school from 1993–1994. He did his TTI at Mettu Teacher's College Department of Aesthetics and Physical Education since 1996 E.C., and in 1999-2002 he joined TTC at Nekemte and his first degree at Haromaya University, a BSc in Sport Science by summer program from 2005-2010 E.C., and served as a teacher since the last 16 years and 2 years of work at the office, totaling 18 years of work experience. In 2015, E.C. joined Jimma University to pursue his MSc degree in athletic coaching.

# Abstract

*This study aimed to assess long-term athlete development and training methodologies for endurance athletes. Using mixed research methods, including a survey, interviews, and observations, the researchers collected data from 120 respondents and 3 interviewees and selected by census sampling techniques for survey questions. Qualitative data was collected from three respondents selected by the purposive method. Quantitative data was analyzed through descriptive statistics (frequency, percentage, mean, and standard deviation) using SPSS version 26. Beside this interview and observation, data were analyzed qualitatively, and triangulated data was gathered through quantitative methods. Based on the analysis made of this study, conclusions were drawn, and the findings of this study indicated the key findings include, Periodization, the majority of athletes (70.83%) reported that traditional periodization training programs were not effective for long-term development, suggesting a need for more individualized and flexible approaches. Progressive Overload: Over 60% of respondents felt that standard progressive overload training methods had not led to significant performance improvements. Age-Appropriate Adaptation the study recommends that coaches carefully account for athletes' age, maturation, and injury risk when designing training plans. The study concludes that coaches and trainers need to re-evaluate their approach to long-distance athlete development and training, and identify more effective methodologies. By deeply understanding the nuanced factors that shape the journey of endurance athletes, coaches can optimize their approach and unlock the full potential of their talented charges on long distance long term athlete development.*



**Key terms: -** Athlete development, long distance, long term, training methodology

# Abbreviation

**BSc**- Bachelor of Science (BSc) degree.

**CGPA-** Cumulative Grade Point Average

**E.C**- Ethiopian Calendar.

**HPE** - Health and Physical Education.

**HIIT-** High Intensity Interval Training.

**LDLTAD**- Long distance long term athlete development.

**LTAD**- Lon- term Athlete Development.

**MSc**- Masters of Science degree.

**RE**- Running Economy.

**TM**- Training methodology

**TTC**- Teacher's Training College.

**TID**- Training Intensity Distribution.

**TTI**- Teacher's Training Institute.

# CHAPTER ONE

## 1.1. Background of the Study

The historical background of long distance long-term athlete's development and training methodology for centuries, beginning with the holistic approach of ancient Greece and evolving through the modernization of the 19th century (I. Balyi et al., 2020). The 20th century witnessed a scientific approach to training, influenced by pioneers in exercise physiology (Kraemer et al., 2017). The Eastern Bloc countries contributed periodization concepts, while advancements in sports science and technology emerged (Smolianov et al., 2018).The emergence of the Long-Term Athlete Development (LTAD) model brought a developmental perspective, and recent trends focus on individualization and holistic athlete development (Varghese, Ruparell, & LaBella, 2022).

Long-distance long-term athlete development has evolved over time with significant contributions from ancient civilizations, pioneering researchers, and influential figures (Fredericks et al., 2022). The 20th century brought advancements through the work of physiologists like Per-Olof Åstrand and the revolutionary "Lydiard Method" developed by Arthur Lydiard (Brooks & Track, 1999). The emergence of sports science and technology further enhanced training methodologies (Browne et al., 2021). Long-Term Athlete Development models have provided guidelines for nurturing endurance athletes, and current trends emphasize individualization and holistic approaches (Ropret & Jevtić, 2019). The development of training methodologies for long-distance athletes has evolved over time, with various approaches and strategies being employed to enhance performance and promote long-term athlete development (Ropret & Jevtić, 2019). Along this in the early history of long-distance running, training methods were often based on trial and error, with athletes relying on their natural abilities and intuition. Distance running was primarily seen as an endurance-focused activity, and athletes would simply run long distances at a steady pace to improve their performance. Scientifically-based training methods were limited during this period (Smith, 2003).

Long-distance running requires a comprehensive training methodology and a well-structured long-term development plan to optimize athletes' performance and achieve sustainable success. Woliso town athlete club aims to develop and (naturally) nurture talented long-distance runners within its program. To ensure effective athlete development, it is crucial to understand the current literature on training methodologies and long-term athlete development strategies.

Training Methodology sound training methodology was essential for optimizing long-distance running performance and recent studies have focused on refining training periodization models to enhance athletes' adaptation and peak performance provides an updated model of training periodization in endurance sports, highlighting new insights and recommendations for optimizing training progression and workload management (Issurin, 2016). Training Intensity and Volume has finding the optimal balance between training intensity and volume is crucial for long-distance runners and recent research has examined the training intensity distribution among well-trained and elite endurance athletes conducted a study to analyze the training intensity distribution patterns and provide insights into optimizing training loads for endurance athletes (Stöggl & Sperlich, 2019). Strength and Conditioning are training plays a vital role in long-distance running performance and recent studies have focused on the effects of strength training on running economy in highly trained runners Conducted a systematic review and meta-analysis of controlled trials to examine the impact of strength training on running economy in highly trained runners (Montoro-Bombú et al., 2023). Long-term athlete development requires careful planning and progression through different training stages and recent research has focused on optimizing strength training for endurance performance in sports such as running and cycling provides comprehensive review of strength training strategies to enhance endurance performance, offering valuable insights for long-term training and competition planning (Rønnestad et al., 2020).

Monitoring and Support are regular monitoring and comprehensive support are vital for long-term athlete development and recent studies have examined the relationship between training load and injury risk, emphasizing the importance of load management and present the International Olympic Committee consensus statement on load in sport and the risk of injury, providing guidelines for monitoring training loads and minimizing the risk of injuries (Soligard et al., 2016).

Ethiopia has long been recognized as a powerhouse in the world of long-distance running, with athletes from the country dominating many of the most prestigious marathon and track events globally. This sustained success can be traced back to the pioneering efforts of Ethiopian distance running legends like Abebe Bikila, who famously won the 1960 Olympic marathon in Rome while running barefoot (Robinson, 2022). Bikila's historic victory marked the beginning of Ethiopia's rise to prominence in the sport, which has continued to the present day. Subsequent generations of Ethiopian distance runners, such as Haile Gebrselassie, Kenenisa Bekele, and Tirunesh Dibaba, have further cemented the country's

status as a global powerhouse, winning numerous Olympic and World Championship titles (Horne & Whannel, 2020).

Recent research has highlighted the multifaceted factors that have contributed to Ethiopia's distance running prowess, including genetic predisposition, high-altitude training, and well-developed grassroots talent identification and development programs (Jena, 2020). However, as noted in the previous statement, a comprehensive understanding of the specific training methodologies and long-term athlete development approaches employed within the Ethiopian context remains elusive. Uncovering the nuances of the Ethiopian distance running ecosystem, from the training practices of elite athletes to the holistic development frameworks used by coaches and clubs, could yield valuable insights to guide the training and development of endurance athletes worldwide

By considering the recent findings and recommendations from these studies the researcher focus on, the Woliso Town Athlete Club can develop Long distance long-term athlete development and training methodology plan that maximizes the potential of their long-distance runners.

## 1.2. Statement of the problem

Long distance running events, such as marathons and ultra-marathons, require extensive training and development over many years to achieve peak performance. However, there was limited research on the long-term training methodologies and developmental stages required for elite-level long distance athletes. Most existing studies focus on short-term training programs or cross-sectional analyses, rather than longitudinal examinations of an athlete's multi-year journey to the highest levels of the sport (Boullosa et al., 2020). The key gap identified in the provided text was the lack of in-depth, longitudinal research on the long-term training methodologies and developmental stages required for elite-level long-distance athletes. This lack of in-depth, longitudinal data on long-term athlete development in endurance sports represents a significant gap in the literature.

Periodization and Training Optimization a study investigated the effects of a periodized training program on the endurance performance of elite long-distance runners (Mujika et al., 2018). The findings suggested that a well-structured periodization plan can lead to significant improvements in running economy and overall endurance capacity and explored the challenges of balancing training intensity and volume in the long-term development of long-distance runners (Borresen & Ian Lambert,

2009). The researcher highlighted the need for more comprehensive periodization strategies to address this issue.

Strength and Conditioning Strategies (Radcliffe et al., 2015) examined the impact of a holistic strength and conditioning program on the performance of long-distance runners development. The study suggested that a tailored approach incorporating resistance training, plyometrics, and movement-specific exercises can enhance running economy and power output. The researcher emphasized the importance of developing individualized strength and conditioning plans to support the unique needs of long-distance runners. While these studies have provided valuable insights into the training methodologies and long-term development of Ethiopian long-distance runners, there appears to be a need for further research additionally these researches within their gap they did in other areas. However, the researchers did not apply this research at the Woliso Town Athlete Club. Addressing these gaps in the research can enable the Woliso Town Athlete Club to develop and implement more effective, evidence-based training methodologies that cater to the unique needs and challenges of long-distance, long-term athlete development in the Ethiopian context.

## 1.3. Research question

1. What are the Long distance long-term athlete training methods in Woliso Town athlete club?
2. What are the long distance long- term athlete developments in Woliso Town athlete club?
3. What factors challenge the long-term development and training methodologies of long-distance athletes at the Woliso Town Athlete Club?

## 1.4. Objects of the study

### 1.4.1 General Objectives of the Study

This study aimed to assess long distance long-term athletes' development and training methodology in woliso town athlete's club.

### 1.4.2 Specific Objectives

1. To assess the long distance long term athletes training methods on Woliso Town athlete club.
2. To identify the long distance long -term athlete development in Woliso Town athlete club.
3. To identify the factors that challenge long distance long-term training methods and athlete's development in Woliso Town athlete club.

## 1.5. Significance of the Study

This study provided information about long-distance, long-term athlete development and training methods in club. Even though there hasn't been enough research done on this topic, the research also serves as a study resource for other academics.

For this purpose, the study's relevance was to:

- ✓ At first the coaches develop their coaching philosophy from the outcomes of the research.
- ✓ On the second the society of woliso town beneficiary from the athlete achievements.
- ✓ Incorporate the results of the research into the training methodology for woliso town athlete club.
- ✓ Moreover, the findings of this research are expected to serve as a source of reference for future research and help the club.
- ✓ Woliso town administration and sport office can be benefited from the finding of the research to understand the gap and provide support the necessary for the club.

The overall significance of this study lies in its potential to optimize the training methodology and long-term athlete development program in the Woliso Town athlete club, leading to improved performance, injury prevention, talent development, and long-term success in long-distance running.

## 1.6. Delimitations of the Study

The delimitations of a study refer to the boundaries or limitations that the researcher establishes to narrow down the scope and focus of the study. Delimitations are necessary to maintain focus, ensure feasibility, enhance research validity, and facilitate future research. This study focused on the Oromia regional state's South West Showa Zone Woliso town athlete club, this study was conducted from January 1, 2024, to June 31, 2024. The study period was selected to capture the data and during this time the athlete focused on the competition time so all athletes come together and seriously involved on the completion. and the study was specifically focused on the long-distance long-term athlete's development and training methodology within the Woliso town athlete's club such as coaching methods, training methodology, athlete development methods, facilities, and training equipment in the club.

## 1.7. Limitations of the Study

In conducting the study, the researcher has been challenged by the following limiting factors:

- The small sample size of the club may hinder the generalization of the results to other athletic clubs in other zones, regions, and countries
- Lack of accurately recorded profiles of athletes, unclear explanations in the documents.
- Lack of relevant reference, materials, books and literature in the study area.

## 1.8. Definition of term

**Load Management**: Load management, within the scope of this study, refers to the strategies and practices employed by the Woliso Town Athlete Club to regulate and balance the training loads imposed on long-distance athletes (Bowen et al., 2016).

**Long term athlete development: -** in the context of this study, refers to a comprehensive and systematic approach aimed at optimizing the long-term progression, performance, and overall development of long-distance athletes (Seiler, 2010).

**Periodization:**-the division of the overall training programmed in to specific period, typically divided into macrocycles, mesocycles, and microcycles (Painter & Mcbride, 2012).

**Performance Outcomes**: Performance outcomes, in the context of this study, refer to the measurable results achieved by long-distance athletes (Daniels & Bailey, 2014).

**Recovery strategy: -** recovery is vital as it ensures training and performance can continue at high intensities and longer durations to further stimulate the body and cause adaptations (Mesfen et al., 2016).

**Talent Identification:-S**tudy encompasses the processes and criteria used to identify and select athletes with potential for success in long-distance running (Höner et al., 2023).

**Training intensity:** refers to how hard your body is working during physical activity (Painter & Mcbride, 2012).

**Training methodology:-** For the purpose of this study, training methodology refers to the systematic and structured approach employed for the training of long-distance athletes (Painter & Mcbride, 2012).

**Woliso Town Athlete Club**: The Woliso Town Athlete Club refers specifically to the athletic club located in Oromia regional state in South West Showa Zone Woliso town, Ethiopia, which is the subject of this study.

# CHAPTER TWO

## 2.1. REVIEW RELATED LITRETURE

The development of long-distance athletes requires a comprehensive training methodology that encompasses various aspects of physical, physiological, and psychological preparation. This literature review aims to explore existing studies and research related to long-distance athlete development and training methodologies, specifically focusing on the case of the Woliso Town athlete club.

## 2.2. The long distance Long-term athlete's development and Training Methodology

The long distance long-term athlete's development and training methodology comprehensive and well-structured training methodology is crucial. This methodology should consider various factors such as physiological adaptations, skill development, injury prevention, aerobic conditioning, endurance training, speed work, strength training, and recovery strategies. And individualization, Long-term development programs for distance runners typically focus on gradually increasing training volume, incorporating different types of workouts (e.g., endurance runs, tempo runs, intervals), and implementing systematic progressions. The goal is to optimize aerobic capacity, running economy, muscular endurance, and mental resilience over an extended period (Varghese, Ruparell, & LaBella, 2022). And another study aimed to investigate the relationship between training intensity distribution (TID) and performance in elite endurance athletes, including long-distance runners, and the findings suggested that a Periodization of Distance Running training approach, which emphasizes a combination of low-intensity and high-intensity training sessions, may be beneficial for optimizing performance in long-distance runners (Casado et al., 2022).

Additionally, a recent book by renowned running coach and exercise physiologist, Dr. Jack Daniels, titled "Daniels' Running Formula" provides valuable insights into training methodologies for long-distance runners (York, n.d.). The book incorporates scientific principles and practical guidelines to help runners of all levels optimize their training programs. It covers topics such as training intensity zones, workout structure, periodization, and individualization of training plans, offering evidence-based recommendations for improving performance in long-distance running.

Overall, the training methodology for a long-distance runner's system is a dynamic and evolving field, with ongoing research and insights from experts in the field. It is essential for long-distance runners to stay updated with the latest literature, consult with qualified coaches, and tailor their training programs based on their individual needs, goals, and current fitness levels (Ryan & Dockray, 2019).

### 2.2.1. Periodization

Periodization involves dividing an athlete's training into distinct phases to promote progressive adaptation and peak performance during specific periods. Traditional periodization models, such as the macrocycles, mesocycles, and microcycle, have been widely used in endurance sports training. These models help plan and organize training loads, recovery periods, and competition schedules to optimize performance improvements while minimizing the risk of overtraining (Maximizing, 2020).

### 2.2.2. Training Intensity and Volume

The optimal balance between training intensity and volume is crucial for long-distance runners. High-intensity interval training (HIIT) has shown positive effects on endurance performance by improving aerobic capacity, lactate threshold, and running economy (Seiler, 2019). Additionally, incorporating lower intensity, long-duration runs (e.g., steady-state runs) can enhance aerobic endurance and improve the body's ability to utilize fat as a fuel source during prolonged efforts (Stöggl & Sperlich, 2019).

### 2.2.3. Strength and Conditioning

Strength and conditioning training plays a vital role in long-distance running performance. It helps improve running economy, muscular endurance, and injury prevention (Ferrauti et al., 2018). Resistance training, plyometric, and core stability exercises are commonly included in long-distance runners' strength and conditioning programs. These exercises target specific muscle groups and movement patterns relevant to running mechanics (Jeffreys, 2021).

### 2.2.4. Long-Term Athlete Development

Long-Term Athlete Development (LTAD) is a framework that aims to optimize the development and performance of athletes over their entire athletic career, and it encompasses various training techniques and principles that are specific to different stages of an athlete's development (Dowling et al., 2020).

## 2.3. Fundamentals Stage

The fundamentals stage focuses on developing basic movement skills and overall physical literacy, and a recent reference in this area is a study published in the Fundamental Movement Skill Intervention on Physical Activity and Health-Related Fitness in Children on the on the development of fundamental movement skills in promoting physical activity and overall health (A García-Hermoso, AM Alonso-Martínez, 2020 ).

### 2.3.1. Stage 1: Discover, Learn and Play (Ages 0-12)

This is the first step to being involved with sports at a young age (0–12) or when first introduced to a new sport. The discovery of key concepts and motor skills of the sport or activity is critical to learning how the sport is played. Many skills are transferable between sports. Programs should accommodate athletes who participate in multiple sports (Newell et al., 2021). This early stage requires coaching that will allow fun and enjoyment through discovery and exploration.

### 2.3.2. Stage 2: Develop and Challenge (Ages 10-16)

The second stage of the development process occurs after an athlete has been engaged in a sport and wants to explore more organized training options. This stage focuses on refining the skills needed to be successful in the activity or sport and then furthering skill development through challenges such as recreational competition, organized sports programs, or club participation. Athlete readiness and motivation determine the choice to pursue the next level in sport. The second stage may begin earlier for some athletes who are quick to develop physically and mentally (Varghese, Ruparell, Labella, et al., 2022). Fun and socialization are still key areas of emphasis to encourage future participation and avoid burnout.

### 2.3.3. Learn to train stage

The learn-to train stage emphasizes the development of sport-specific skills, aerobic fitness, and overall athleticism. A recent reference in this stage is a review published in the International Journal of Sports Physiology and Performance titled "Long-Term Athlete Development in Youth Soccer. The review examined LTAD models and practices in youth soccer and provided insights into effective training strategies during the learn-to train stage (Varghese, Ruparell, & LaBella, 2022).

### 2.3.4. Train to train stage

The train-to-train stage focuses on further developing sport-specific skills, strength, and endurance. A recent reference in this stage is a study published in which it analyzed the impact of resistance training on physical fitness components, such as strength, power, and endurance, in adolescent athletes. The findings supported the inclusion of resistance training in the train-to-train stage to enhance athletic performance and reduce injury risk (Granacher & Borde, 2017).

### 2.3.5. Train to Compete Stage

The train to compete stage aims to optimize performance for competition at the highest levels, and the most recent reference in this stage is a research article published in the British Journal of Sports Medicine titled "*Periodization and Peaking in Elite Athletes: A Scoring Review."* This article explored the concepts of periodization and peaking in elite athletes across various sports, including track and field, cycling, and swimming. It highlighted the importance of personalized training programs, tapering strategies, and competition-specific preparation in maximizing performance during the train to compete stage (Chen et al., 2022).

### 2.3.6. Train to Win Stage

The train-to-win stage focuses on fine-tuning skills, optimizing physical conditioning, and managing the demands of high-level competition. A recent reference in this stage is a study published in the Journal of Sports Sciences titled "*Performance Monitoring and Load Management in Elite Athletes.*"( Balyi et al., 2018).

Performance monitoring techniques and load management strategies are used by elite athletes across different sports and emphasize the significance of individualization, recovery strategies, and data-driven decision-making to support training optimization and performance during the train-to-win stage. It was important to note that the field of long-term athlete development was continuously evolving, and new research was constantly being published. These recent references provide valuable insights into LTAD techniques, but it's always recommended to consult with qualified coaches, sports scientists, and experts in the field for the most up-to-date and tailored information (West et al., 2021).

## 2.4. Long-Term Training and Competition Planning

Long-term athlete development requires a systematic approach to training and competition planning, and athletes should progress through different stages, emphasizing skill development, aerobic base training, competition experience, and specialization (B. I. Balyi, 1998).

Coaches and support staff should collaborate to design periodized training plans that consider the athletes' chronological and biological age, ensuring gradual and sustainable improvements in performance (Rønnestad & Mujika, 2014).

## 2.5. Monitoring and Support

Regular monitoring of athletes' progress was an essential for long-term athlete development and Physiological assessments, performance testing, and monitoring training load can provide valuable insights into athletes' adaptation and readiness for competition. Athletes also benefit from multidisciplinary support, including nutrition guidance, psychological support, and injury prevention strategies (Rønnestad et al., 2020).

The overall training methodology and long-distance long-term athlete development in the context of the Woliso town athlete club should consider the gaps in the training methodology of periodization, training intensity and volume, strength and conditioning, long-term planning, and monitoring (Id & Baker, 2022). By implementing a comprehensive and evidence-based approach, the club will foster the development of talented long-distance runners and maximize their potential for success.

## 2.6. Factor affecting training methodology

Identifying factors that hinder long-distance, long-term athlete development and training methodologies in terms of performance enhancement was crucial for optimizing training programs (Boullosa et al., 2020).

### 2.6.1. Over training and Overreaching

Overtraining and overreaching refer to excessive training loads and inadequate recovery, leading to negative effects on performance and an increased risk of injury. A recent reference in this area was a study published in the Journal of Science and Medicine in Sport titled "*Overreaching and Overtraining in Endurance Athletes: A Scoping Review.*" The study explores the prevalence, causes, and consequences of overreaching and overtraining in endurance athletes, including long-distance runners, shedding light on the detrimental impact they can have on long-term development (Bell L et al., 2020).

### 2.6.2. Imbalance between training load and recovery

Achieving the right balance between training load and recovery was crucial for long-term development, and insufficient recovery can lead to chronic fatigue, decreased performance, and increased injury risk. A recent reference in this area is a study published in the International Journal of Sports Physiology and Performance titled "*Training load and recovery Imbalance in Endurance Athletes: A Systematic Review*". The study examines the relationship between training load, recovery practices, and

performance outcomes in endurance athletes, providing insights into the negative consequences of an imbalance between the two (Jones et al., 2017).

### 2.6.3. Lack of Individualization

Individualization involves tailoring training programs to the specific needs, abilities, and goals of each athlete, and failing to consider individual characteristics and preferences can hinder long-term development. A recent reference in this area is a review published in the European Journal of Applied Physiology titled "*Individualized Exercise Prescription: Evidence, Potential, and Perspectives in Endurance Sports.*" The review discusses the importance of individualized exercise prescription in endurance sports, including long-distance running, and highlights the potential benefits for optimizing performance and reducing injury risk (Jones et al., 2017).

### 2.6.4. In Sufficient monitoring and feedback

Regular monitoring of training progress and feedback was an essential for identifying areas for improvement and making necessary adjustments, and a lack of proper monitoring and feedback systems can hinder long-term development. A recent reference in this area was a study published in the Journal of Sports Sciences titled "*Training monitoring and feedback strategies in endurance sports: A systematic review.*" The study examines different training monitoring and feedback strategies used in endurance sports and emphasizes their importance in enhancing performance and reducing the risk of injury (Smith, 2003).

### 2.6.5. Poor nutrition and hydration practices

Proper nutrition and hydration play a critical role in supporting training adaptation, recovery, and overall performance, and inadequate nutrition and hydration practices can hinder long-term development and increase the risk of injuries. A recent reference in this area was a review published in the international journal of sport nutrition and exercise metabolism titled "*Nutrition and hydration strategies for endurance running: A systematic review*." The review summarizes evidence-based nutrition and hydration strategies for endurance runners, highlighting their impact on performance and injury prevention (Thomas et al., 2019). Understanding these factors was crucial for implementing effective strategies, overcoming barriers to optimize long-term athlete development at the Woliso Town Athletic Club, and seeking guidance from qualified coaches and sports scientists to address them effectively.

### 2.6.6. The strategies of coaches employ

Exploring the strategies and systems employed by coaches during the coaching process of training methodologies for long-term development of long-distance athletes in terms of performance enhancement and provides valuable insights into effective coaching practices (Fleming et al., 2019).

### 2.6.7. Individualized Training Programs

Coaches often employ individualized training programs tailored to each athlete's unique needs, abilities, and goals. So, a recent reference in this area was a study published in the Journal of Sports Sciences titled the study examines the concept of individualization in endurance sports, including long-distance running, and discusses the benefits of individualized training programs for optimizing performance (Runners, 2022).

### 2.6.8. Periodization and training planning

Coaches utilize periodization models and effective training planning to structure training over specific time periods, and a recent reference in this area was a review published in the International Journal of Sports Physiology and Performance. The review explores different periodization models, planning approaches, and their effects on performance in endurance sports, providing insights into the strategies employed by coaches in this context (Mujika et al., 2018).

### 2.6.9. Monitoring and feedback systems

Coaches implement monitoring and feedback systems to track athletes' progress, evaluate training loads, and provide timely feedback for adjustments. A recent reference in this area was a study published in the Journal of strength and conditioning research. The study examines different monitoring and feedback strategies used in endurance sports, highlighting their effectiveness in optimizing performance ( Foster et al., 2019).

### 2.6.10. Sports science support

Coaches collaborate with sports scientists and utilize their expertise to enhance the training process and provide valuable insights through physiological testing, biomechanical analysis, and data-driven decision-making. A recent reference in this area was a review published in the European journal of sport science, "*The role of sports science in endurance performance: A systematic review*." The review discusses the contribution of sports science support in endurance sports, including long-distance

running, and emphasizes the collaborative effort between coaches and sports scientists for optimizing athlete development (Luczak et al., 2020).

### 2.6.11. Injury prevention strategies

Coaches employ injury prevention strategies, such as warm-up routines, mobility exercises, and targeted strength and conditioning programs, to reduce the risk of injuries in long-distance athletes. A recent reference in this area was a study published in the Journal of Orthopedic & Sports Physical Therapy in "*Prevention of running-related injuries in endurance runners: A systematic review and meta-analysis*." The study examines various injury prevention strategies for endurance runners and provides evidence of their effectiveness, highlighting the role of coaches in implementing these strategies (Open & the, 2020).

It was important to note that effective coaching practices often involve a combination of these strategies, tailored to the specific needs of the athletes and supported by ongoing research at the Oromia regional state South West Showa Woliso town athlete club and collaboration between coaches, sports scientists, and other professionals in the field.

## 2.7. Empirical literature

Long distance Long-term athlete's development and training methodology in the context of long-distance running has been the subject of extensive empirical research (Shipway, 2010). While it was difficult to provide an exhaustive list of all the literature in this field, the researcher can mention some key studies and concepts that have contributed to the researcher's understanding of long-distance long-term athletes' development and training methodologies (Largo et al., 2018)s. Here are a few notable examples:

"***The Science of Winning***" by Jan Olbrecht (2019). This book presents an in-depth analysis of training principles and physiological adaptations in endurance running. Olbrecht emphasizes the importance of individualizing training programs based on an athlete's specific physiological characteristics and responses (*lactate profile and 5-kilometer time trial performance in*, 2019).

***"Training for Endurance: Lessons from Longitudinal Research***" by Seiler (2018). Seiler's research examines the training practices of elite endurance athletes, focusing on the distribution of training intensity across different physiological zones. He popularized the concept of "*polarized training*,"

which suggests that a combination of high-intensity training and low-intensity recovery sessions yields optimal results (T. Stöggl & Sperlich, 2014). "***Periodization: Theory and Methodology of Training***" by Tudor Bompa and G.Gregory Haff (Edition, 2019): This book explores the concept of periodization, which involves dividing an athlete's training into distinct phases to optimize performance. While not specific to long-distance running, the principles discussed can be applied to endurance sports. These are just a few examples of the empirical literature on training methodology and long-term athlete development in long-distance sports. It is worth noting that the field of sports science is continuously evolving, and new studies and perspectives emerge regularly. Exploring scientific journals, books, and reputable sports science publications can provide a more comprehensive understanding of this topic.

# CHAPTER THREE

## 3.1. RESEARCH METHODOLOGY

The research method refers to the systematic process and approach employed to conduct the study and address the research objectives. In the case of studying long-distance long-term athlete development and training methodology in the Woliso Town Athlete Club, a mixed research method combining both quantitative and qualitative approaches, triangulation, was employed (Heale et al., 2013).

### 3.2. Research Design

Research design is the plan of action that links philosophical assumptions to specific methods. The researcher employed a descriptive survey research design. This allowed the researcher to examine the effects of long-distance long-term athlete's development and training methods at the Woliso Town Athlete Club in Oromia. As the name suggests, the primary goals of this research design were to triangulate both qualitative and quantitative methods of data collection for a comprehensive interpretation that takes a wide range of variables into consideration. Obtaining information that describes events and then organizing, tabulating, and describing the phenomenon were all part of triangulation research.

### 3.3. Study setting

Woliso is a town in central Ethiopia, found in the South-West Showa Zone of the Oromia Region, 114 km south-west of Addis Ababa along the Addis-Jimma road. It has a latitude and longitude of 8°32′N, 37°58′E, and an elevation of 2500 meters above sea level (CSA). This contributes to a moderate and pleasant climate throughout the year. The surrounding area is characterized by rolling hills, green valleys, and agricultural fields. Overall, South West Showa Woliso Town combines natural beauty, cultural heritage, and economic activity, making it an important hub in the region. The town is one of the urban centers that was established in 1926. Woliso Town serves as the administrative center of the south-west Showa Zone. Woliso is now expanding in all aspects; it is the center of economic, social, and political activities in the south-west Showa zone of the Oromia Region. Today, Woliso town is dominated by different nations and nationalities, especially the Oromo, Gurage, and Amara nations. Woliso is well known for its teff, onions, and inset. The total population of the town is estimated at 140,725 (Woliso town municipal report 2024). In the case of studying the long-distance athlete development and training methodology in the Woliso Town athlete club, Woliso Town is the primary

focus of the study, as it is the home of the Woliso Town athlete club. The town's physical environment, facilities, and resources available within the club's premises will play a significant role in shaping the training methodology and long-term athlete development practices.

**Figure 1**: Location of woliso town map

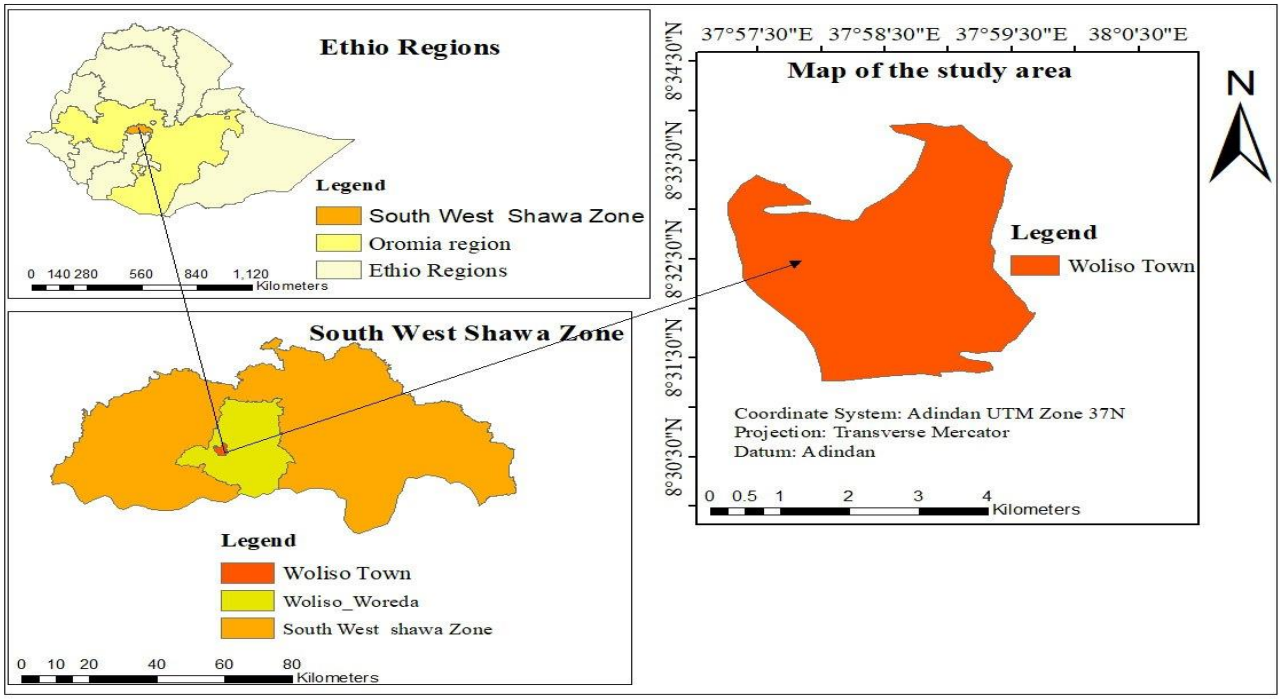


**Figure 1. Location of woliso town map (GIS 2024).**

## 3.4. The population of the study

Woliso town athlete club was formed and known by Oromia athletics club since 2010 E.C., which has a total of 75 members:- 2 coaches, 4 experts, and 8 sports administration office workers and 30 males and 23 females athletes, 6 male woliso town secondary school teachers of HPE . At the time, this club have 123 members (reference to the report of Woliso Town Athlete Club managers, October 2016 E.C.). This study included 120 people for questionnaires by using census sampling techniques (athletes, experts, and secondary school physical education teachers sport youth office members) and 3 coaches for interviews by using purposive sampling techniques to obtain in-depth data for the study.

**Table 1. Population, sample size and sampling techniques**

| No | Woliso town athlete club members and stakeholders | Total population | | | Sample size | | | | Sampling techniques |
|---|---|---|---|---|---|---|---|---|---|
| | | M | F | Total | M | Fe | Total | % | |
| *1* | Athlete's | 48 | 15 | 63 | 48 | 15 | 63 | 100 | Census |
| *2* | Manager | 1 | 1 | 2 | 1 | 1 | 2 | 100 | Census |
| *3* | Coaches | 2 | 1 | 3 | 2 | 1 | 3 | 100 | Purposive |
| *4* | Experts | 12 | 5 | 17 | 12 | 5 | 17 | 100 | Census |
| *5* | Sport youth members | 13 | 6 | 19 | 13 | 6 | 19 | 100 | Census |
| *6* | Woliso HPE secondary school teacher's | 12 | 7 | 19 | 12 | 7 | 19 | 100 | Census |
| *7* | Total | 88 | 35 | 123 | 88 | 35 | 123 | 100 | |

## 3.5. Sampling techniques

The study's employed members of Woliso Town Athlete Club to obtain rich and detailed information from Athlete, experts, office staff, Woliso secondary school HPE teachers by using census sampling techniques for the questionnaire, Because, they were small in number the census sampling techniques is sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the sample (Guetterman, 2015). Thus all target population of the study included in the sample size of the study. In addition to these Athletes coaches were included into study for interview by using purposive sampling techniques to obtain pertinent data for the study. Therefore all long distance, middle and short distance, coaches, experts and members of sport youth office members were the target of the population.

## 3.6. Source of data

Data can be defined as the quantitative or qualitative values of a variable. Data was thought to be the lowest unit of information from which other measurements and analyses can be made. To attain the objective of this study, the researcher used primary sources of data from the athletes' coaches, managers, sport office, experts and woliso town secondary school teachers of PE.

## 3.7. Data collection instrument

To get reliable information from the research participants, questionnaires, interviews, and observation were used as tools for data collection from coaches, athlete, expert, sport office and woliso town secondary school teachers of HPE were the sample population.

### 3.8. Questionnaires

The research questionnaire was prepared by researcher and checked by the research supervisor. After the questionnaire was approved, it was distributed to the respondents. Then and used to collect the data from the respondents study on the long-distance long-term athlete's development and training methodology, and factors that affect training methodology and athlete development to address the question for all questions consists of a rating scale of 1–5 points. Likert scale organized by 1 strongly disagree, 2 disagree 3 Neutral 4 agree; 5 strongly agree. The questionnaires were prepared in English, translated into Amharic and Afan Oromo languages, and distributed to all respondents.

### 3.9. Pilot test

The instruments, which was developed under the close guidance of the advisor, and a pilot study was carried out to pre-test the instruments. In addition, to avoid ambiguity and unclear statements, the draft questionnaire was first tested in one athlete club, which was not included in the actual athlete club data collected. In this way, a pilot test was conducted with 10 Athlete. Based on the respondents' responses, some improvements were made to the questionnaires to make them clear and relevant to the basic questions so as to get more valuable information. The clarity of the items for the respondents and the adequacy of time to respond were evaluated. Based on the pilot results, items that had problems were adjusted and amended. Finally, an internal consistency and reliability estimate was calculated using Cronbach's coefficient of alpha. Based on the result, the reliability coefficient of the instrument was found to be 0.852. Therefore, the instruments were reliable because a reliability coefficient of 0.70 and above is considered acceptable in most research situations (Amirrudin & Nasution, 2021).

### 3.10. Interviews

To get rich and deep information through direct interaction with the current coaches of the club, a qualitative collection tool, a semi-structured interview, was employed. The same questioners were put to the entire respondent in the same order in a semi-structured interview form (Turton et al., 2017).

### 3.11. Observations

The researcher used observation as a method of collecting data; the observation was led by the research question and list of observational assessments that were prepared. It was focusing on the training methodology strategic plan and should consider periodization, training intensity and volume, long-term planning, and monitoring of runners within this method. The researcher also paid attention to facilities and equipment in their training field and other related issues of the club. It was systematic, selective ways of watching and listening to an interaction or phenomenon (Sutton & Austin, 2015).

### 3.12. Procedure of data collection

The researcher used census sampling techniques for the questionnaire because of the small number of long-distance runners in the Woliso Town athlete club. This census sampling approach included the entire target population in the sample size, as there was no biased for estimating the probability that each item in the population would be included in the sample. The selection of sampling techniques was based on the need to get rich and in-depth information from trainers, experts, coaches, and office members. The researcher chose census sampling to ensure the sample was representative and resourceful, given the small population size (Muzari et al., 2022). Hence, all long-distance, middle-distance, and short-distance coaches, experts, members of the sports youth office and secondary school HPE teachers were to the target population of the study.

### 3.13. Method of Data Analysis

The data that was obtained from the questionnaire was analyzed using SPSS Version 26 software. Thus, with this program, the data was grouped into categories, with representations referring to each item. Related items were treated together. After carrying out the collection of data through questionnaires, based on the available data, the process of tabulation was carried out. The data was evaluated after the items were grouped into different tables based on the nature of the issues present in the questionnaires. The quantitative method was utilized to analyze the data and summarize the results, including percentage, frequency, mean, and standard deviation. All means of evaluation were important to critically evaluate primary sources of data to ensure their reliability, relevance, and credibility for the researcher.

### 3.14. Ethical considerations

Letter of cooperation from Jimma university department of Sport academy, Woliso town admin. & Athlete club was used to for legality and for the open and clear information getting from the respondents and researcher considers the research values of voluntary participation, confidentiality, and anonymity to ensure the protection of respondents from any possible harm that could arise from participating in the study. Thus, the researcher has clearly introduced the purpose of the study as a partial fulfillment of the degree study program and requests that the respondents participate in the study on a voluntary basis, such that refusal or abstaining from participating was permitted. No names of respondents were mentioned in the thesis to assure the respondents confidentiality of the information given; rather, the researcher and the respondent were promised to be provided with feedback about the findings of the study.

# CHAPTER FOUR

## 4.1. DATA ANALYSIS AND DISCUSSION

This chapter deals with the discussion, analysis, and interpretation of the data gathered from respondents through a survey questionnaire, an interview, and observation. Thus, statistical descriptions of frequency, percentage, mean, standard deviation, and qualitative analysis of data were incorporated into this chapter. The qualitative part was supposed to complement the quantitative analysis. Hence, the qualitative data includes the data gathered through a semi-structured interview with three respondents as well as observation of the club. The quantitative data was collected from a total of 120 respondents, and the qualitative data was collected from three athlete coaches. Thus, this chapter consists of two major parts. The first section deals with the demographic characteristics of the respondents, and the second section represents the analysis and interpretation of the main data.

**Table 1: Reliability of the Questionnaires result checked by Cronbach's alpha.**

| No, | Variables | No, of Items | Cronbach's Alpha |
|---|---|---|---|
| 1 | Long-distance long-term athlete training methodology/Scientific Coaching/ methodology related questions | 12 | 0.862 |
| 2 | For the effectiveness of athlete development training methodology exercise related question | 5 | 0.793 |
| 3 | Warm-up and cool-down routines | 3 | 0.879 |
| 4 | Factors that affect the long distance long term athlete development and training methodology. | 8 | 0.870 |
| 5 | Training methodology of coach | 6 | 0.854 |
| | Average | | 0.852 |

## 4.2. Demographic characteristics of the respondents

A detailed overview of the demographic characteristics of the respondents is provided in Table 4.1. This provides valuable insights into the makeup of the sample.

**Gender:** The sample was predominantly male (71.7%), with a smaller proportion of female respondents (28.3%).

**Age Group:** The data shows that the majority of the respondents (68.3%) were in the 21–25 age group, while 21.7% are above 25 years old and 10% were in the 19–20 age group. This suggests that the athletic club primarily caters to young adults, with a focus on the 21–25 age range. The high representation of this age group could be due to factors such as increased interest in physical activity and sports participation during the transitional period between late adolescence and early adulthood.

**Educational level:** The largest group in terms of educational level were those with 11–12 years of education (34.2%), followed by university-level (22.5%) and college-level (17.5%) education.

**Experience:** The majority of respondents (66.7%) have been members of the athletic club for 4–7 years, indicating a relatively long-standing association.

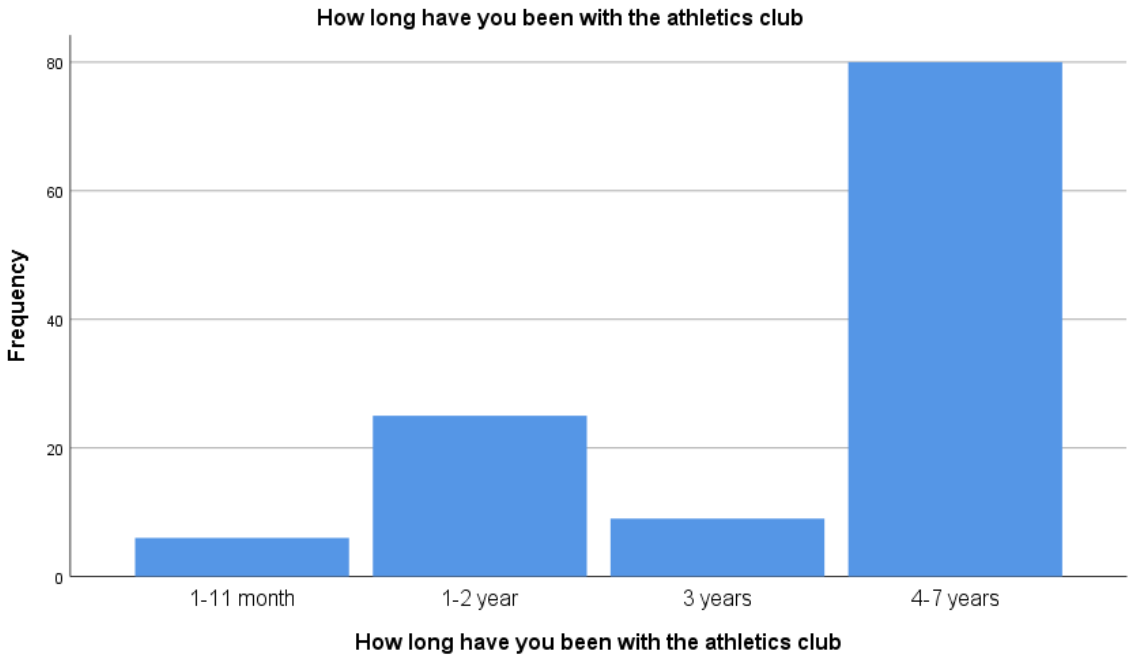


**Figure 2 experiance of the athlete**

**Background:** Family athletic background was largely unknown, with most respondents (58.3%) not recalling if anyone in their family was an athlete previously. These findings give a good high-level understanding of the demographic profile and athletic background of the respondents this information can help inform the club's strategies around promoting inclusivity, diversity, and long-term engagement among its members. Further research and interventions will be warranted to address any gaps identified.

Table 2 Summery Demographic characteristics of the respondents.

| No, | Item | Alternatives | Frequency | Percent |
|---|---|---|---|---|
| 1 | Age group | 19-20 | 12 | 10.0 |
| | | 21-25 | 82 | 68.3 |
| | | above 25 | 29 | 21.7 |
| | | Total | 123 | 100.0 |
| 2 | Gender of the respondent | Male | 88 | 71.7 |
| | | Female | 35 | 28.3 |
| 3 | Educational level | 5-8 | 11 | 9.2 |
| | | 9-10 | 20 | 16.7 |
| | | 11-12 | 41 | 34.2 |
| | | College | 21 | 17.5 |
| | | University | 27 | 22.5 |
| | | Total | 120 | 100.0 |
| 4 | How long have you been with the athletics club | 1-11 month | 6 | 5.0 |
| | | 1-2 year | 25 | 20.8 |
| | | 3 years | 9 | 7.5 |
| | | 4-7 years | 80 | 66.7 |
| | | Total | 120 | 100.0 |
| 5 | Is anyone from your family an athlete before? | Yes | 4 | 3.3 |
| | | No | 46 | 38.3 |
| | | I do not Remember any one | 70 | 58.3 |
| | | Total | 120 | 100.0 |

**Table 3** (Items 1–6) presents data on the opinions of respondents regarding various aspects of long-distance training methodology there are many different types of the long distance athlete developments methodology. However, from those methodologies the researcher gave an attention which is mandatory for each training the coaches consider specifically the effectiveness of periodization training programs, the contribution of progressive overload training methods, the importance of individualized training programs, the impact of strength and conditioning exercises, the significance of recovery and rest periods, and the appropriateness of the training program for the age level of the athletes were the key for getting in depth information from the respondents.

**Periodization training programs** The majority of the respondents (70.83%) indicated that they "disagree" with the effectiveness of periodization training programs in improving long-distance athletes' development. 5 (4.2%) are neutral on the effectiveness of periodization training programs. , strongly Agree: 30 (25.0%) periodization training programs have been effective in improving long-distance athletes' development. The mean score of 2.79 and the standard deviation of 1.296 suggest the majority of the respondents on the effectiveness of periodization training programs was not well organized and implemented on their training program. In addition, the data collected from the three coaches through interviews said that "*The plan for a periodization training program was not effectively prepared for performing athlete development programs. B*ut the researcher believes that periodization training programs or the division of exercise for the athlete development program is an essential. And, in turn, will support the long-term development and success of their long-distance athletes. Regarding to this study indicated that periodization is a well-established training approach in the field of endurance sports, which involves the strategic planning and manipulation of training variables over time to optimize performance and adaptation (Mujika et al., 2018).

**Progressive overload training methods:** The majority of respondents (62.5%) "Disagree" that progressive overload training methods have contributed to significant improvements in long-distance athletes. A quarter of the respondents (25.8%) "Strongly agree" that progressive overload has been beneficial. The mean score of 3.01 and the standard deviation of 1.338 indicate the coaches don't implement their training plan. This indicated that the coaches did not implement on their plan of progressive overload training methods in their training development programs. However, the data collected through interviews said that "*progressive overload training methodology plays a big role in contributing to the significant improvements of athletes gradually but most of the time we were not consider to prepared the organized plan to gradually increasing intensity ,volume of an exercise that develop the performance of the athletes.*" The researcher believes that progressive overload is a fundamental training principle that involves gradually increasing the training load. Regarding this numerous studies indicates that progressive overload, training methods have contributed to significant improvements over time to stimulate continued adaptation and improvements in athletic performance (L. R. Bell et al., 2024).

**Individualized training programs, 29.2**% disagree, 59.2% agree, and 11.7% strongly agree that individualized training programs tailored to an athlete's specific needs have been beneficial, with a mean of 3.53 and a standard deviation of 1.037. Which indicates that individualized training programs have been beneficial for them. But data obtained from the coaches through interviews indicates that "*lack of individualized training plans, the club seems to have a "one-size-fits-all" approach rather than tailoring plans to the specific needs and stages of development for different athlete groups."* However, the researcher agree by the idea that an individualized training plan has benefits for the athletes, who have different needs, abilities, and variability in their performances so the coach should prepare the plan for the athlete need and abilities individually . Regarding this, different studies have been amended about individualized training programs that consider an athlete's specific needs, abilities, and goals, which have long been recognized as an important factor in the effective development and performance of endurance athletes (Wackerhage & Schoenfeld, 2021).

**Strength and conditioning exercises program:** The data shows that 62.5% "disagree" and 26.7% "strongly agree" that incorporating strength and conditioning exercises into training routines has positively impacted long-distance athletes. The mean score of 3.01 and standard deviation of 1.427 suggest a wide range of opinions on this topic. However, according to the interview, "*The coaches have supported "strength and conditioning exercise have contributed for the long distance athlete developments program.*" Incorporating strength and conditioning exercises into training routines has positively impacted long-distance athletes". Regarding this, the literature supports the inclusion of strength and conditioning exercises as a complementary component of endurance training ( Nebiker et al., 2018).

**Recovery and rest periods program:** 8.3% disagree, 15% agree, and 75% strongly agree that adequate recovery and rest periods were crucial for long-term development in long-distance athletes, with a mean of 4.57 and standard deviation of 0.886. The respondents suggest that there was a strong understanding and acceptance within the athletes and sport science community regarding the crucial role of recovery and rest periods in the long-term development and performance of long-distance athletes. In this case, data collected from interviews indicates that "recovery and rest periods are an essential for long-term development in long-distance athletes." Regarding this, the study indicates that the body adapts, repairs, and rebuilds in response to the physical and mental stresses of training and competition (Mujika et al., 2018).

**Appropriateness of training program for age level:** The majority of respondents (70.8%) indicated that they "disagree" with the statement that the training program was appropriate for the age level of the athletes. 11.7% of the respondents "agree" that the training program was appropriate for the age level. 17.5% of the respondents "strongly agree" that the training program was appropriate for the age level. The finding that a majority of the respondents believe the training program was not appropriate for the age level of the athletes could have significant implications for the design and implementation of training programs for long-distance athletes. Data obtained through the interview from the three coaches on training program appropriateness for the age levels "*They told us that while we plan to train, we are not considering the appropriateness of the training program for all athletes according to their needs and variances in athlete performances individually."* Regarding this, the interviews suggest that *"the trainers' most of the time do the athletes together, and we give similar tasks and instructions for all.*" However, the researcher agree that while designing the training program, the coach must consider the age level of the athletes and also consider the types of exercise that they have to do progressively. Regarding this studies indicated that the training program was appropriately designed and tailored to the age and developmental stage of the athletes (Zemková & Hamar, 2018).

Generally, the data reveals a dominant negative perception among the respondents regarding the appropriateness of the training program for the age level of the athletes. This suggests a potential mismatch between the training approach and the specific needs and characteristics of the athletes, highlighting the need for further exploration and potential adjustments to ensure the training program meets the age-specific requirements of long-distance athletes.

The overall mean and standard deviation suggest a general lack of consensus among the respondents regarding the effectiveness and appropriateness of the various training methods and program aspects for long-distance athletes.

## 4.3. Data Analysis and Interpretation of Athletes' club's Response

**Table 3 (Item 1-6) The Summary result of the long distance long term training methodology response by respondents**

| No, | Item | Alternatives | Frequency | Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| 1 | Periodization training programs have been effective in improving long-distance athletes' development. | Disagree | 85 | 70.8 | 2.79 | 1.296 |
| | | Neutral | 5 | 4.2 | | |
| | | Strongly agree | 30 | 25.0 | | |
| | | Total | 120 | 100.0 | | |
| 2 | Progressive overload training methods have contributed to significant improvements. | Disagree | 75 | 62.5 | 3.01 | 1.338 |
| | | Agree | 14 | 11.7 | | |
| | | Strongly agree | 31 | 25.8 | | |
| | | Total | 120 | 100.0 | | |
| 3 | Individualized training programs tailored to an athlete's specific needs in long-distance athletes. | Disagree | 35 | 29.2 | | |
| | | Agree | 71 | 59.2 | | |
| | | Strongly agree | 14 | 11.7 | | |
| | | Total | 120 | 100.0 | | |
| 4 | Incorporating strength and conditioning exercises into training routines have positively impacted for long-distance athletes. | Disagree | 75 | 62.5 | 3.01 | 1.427 |
| | | Neutral | 1 | .8 | | |
| | | Agree | 12 | 10.0 | | |
| | | Strongly agree | 32 | 26.7 | | |
| | | Total | 120 | 100.0 | | |
| 5 | Adequate recovery and rest periods are crucial for long-term development in long-distance athletes | Disagree | 10 | 8.3 | 4.57 | .886 |
| | | Neutral | 2 | 1.7 | | |
| | | Agree | 18 | 15.0 | | |
| | | Strongly agree | 90 | 75.0 | | |
| | | Total | 120 | 100.0 | | |
| 6 | The training program is appropriate for the age level of the athletes. | Disagree | 85 | 70.8 | 2.76 | 1.216 |
| | | Agree | 14 | 11.7 | | |
| | | Strongly agree | 21 | 17.5 | | |
| | | Total | 120 | 100.0 | | |

Results associated on **table 3.1. (Item 7-12)** indicated that data presented provides insights into various aspects of long-distance training methodologies and analyze each element in detail:-

**Interval Training:** The use of interval training enhances the performance in long-distance running: 5 respondents (4.2%) strongly disagree that the use of interval training enhances the performance in long-distance running, 58 respondents (48.3%) disagree with the statement, 21 respondents (17.5%) agree that the use of interval training enhances the performance in long-distance running, and 36 respondents (30.0%) strongly agree with the statement. The mean score for the effectiveness of interval training was 3.21, with a standard deviation of 1.414. This indicates that majority of the respondents disagree on the effectiveness of interval training in long distance athlete development program. However, the data obtained from the interviews indicated that "*The effectiveness of interval training for long-distance running was essential for long-distance athlete development.*" Regarding this, numerous studies have demonstrated the benefits of interval training for improving cardiovascular fitness, running economy, and time-trial performance for long distance athletes (Rosenblat et al., 2021).

Generally, the data suggests a diversity of opinions on the effectiveness of interval training for long-distance running. However, the researcher believes interval training was needed for the long distance, and the overall research evidence strongly advocates for the incorporation of this training approach as a means to improve endurance performance in the long-distance running training method.

**Strength Training Program:** The mean score for the positive impact of incorporating a strength training program was 4.72, with a standard deviation of 0.453. This indicates a strong agreement among respondents regarding the positive impact of incorporating a strength training program, which aligns with the current research. Multiple studies have shown that strength training can improve various aspects of endurance running performance, including running economy, time-to-exhaustion, and overall running performance ( Denadai & Greco, 2018).

**Multidisciplinary Support:** The respondents (57.5%) either agreed (30.8%) or strongly agreed (26.7%) that athletes benefit from multidisciplinary support, including nutrition guidance, psychological support, and injury prevention (36.7%) disagreed. (5.8%) of neutral responses. The mean score was 3.48, indicating consideration of multidisciplinary support, including nutrition guidance, psychological support, and injury prevention. The standard deviation was 1.236, which was above the midpoint of the scale.

This Indicate that the majority of respondents agree that coaches should consider and know the benefits of nutrition and the guidance of psychological support for the development of athletes. Regarding this, numerous studies have indicated that multidisciplinary, which incorporates expertise from various disciplines such as nutrition, psychology, and sports medicine, was widely recognized as essential element for supporting the holistic well-being and long-term success of athletes (Till et al., 2022).

**Fundamental Skill Development Program:** The majority of respondents (75.8%) disagree that the coach considers the fundamental stage to be developing the basic skill movements and physical literacy of an athlete from the grassroots level. The mean score was 2.58 (SD = 1.074). This indicates a perceived lack of focus on developing the foundational skills and physical literacy of long-distance athletes during the initial stages of their development. In addition to data obtained from the interview also indicates, "Coaches were not considering the fundamental stages of the athlete while preparing the training methodology of the athlete development program from the grass roots." Regarding this, studies emphasize the critical role of this approach in athlete development. Studies have consistently shown that developing a strong foundation of fundamental movement skills and physical literacy early can lead to better long-term athletic success (Allan et al., 2017).

**High-Volume Training Program:** The mean score for the impact of high-volume training regimens on endurance for long-distance races was 3.03, with a standard deviation of 1.384. This suggests a range of views on the effectiveness of this training approach. Additionally the data collected from coaches' interviews also shows that "*High-volume training regimens are an essential for the improvement of endurance in long-distance races*." The views on the impact of high-volume training regimens on endurance for long-distance rates reflect the ongoing research. While high-volume training has traditionally been a staple in the preparation of elite long-distance athletes, recent studies have challenged the notion that always better (sperlich, 2015).The review by Stöggl and Sperlich (2015) suggests that high-intensity interval training was more time-efficient and effective for enhancing specific endurance performance measures.

**Long-Term Athlete Development Program**: The majority of respondents (63.3%) disagree that the long-term athlete development (LTAD) approach ensures ample time for athletes to develop their skills, endurance, and mental resilience. The mean score was 2.89, with a standard deviation of 1.262. This data suggests that the LTAD approach not be fully meeting the needs of long-distance athletes in terms of providing them with sufficient time and support to develop the necessary skills, endurance, and

mental resilience. In addition data obtained from the coaches through interviews indicate that "*For long term athlete development program they were not consider long-term athlete development design due to the lack of sustainable support for this issue.*" However regarding to this study highlights the importance of further research and evolution of the LTAD approach to ensure the age-appropriate, long-term development of athletes' physical, technical, and psychological capacities (Pietzsch & Wallis, 2020).

Generally, the data reveals majority of perspectives among the respondents on various training methods, support systems, and long-term development approaches for long-distance athletes. While some aspects, such as the benefits of strength training, were widely accepted, other areas like the use of interval training, multidisciplinary support, and long-term development show a lack of consensus among the respondents.

The overall mean across all questions was 3.32, and the overall standard deviation was 1.132. This indicates a moderate level of agreement with the statements, with some variation in responses.

Table 3.1.(Item 7-12) Summary of The long distance long term athletes training methodology questionaries' responses' by respondents

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | The use of interval training enhances the performance in long-distance running. | Strongly disagree | 5 | 4.2 | 3.21 | 1.414 |
| | | Disagree | 58 | 48.3 | | |
| | | Agree | 21 | 17.5 | | |
| | | Strongly agree | 36 | 30.0 | | |
| | | Total | 120 | 100.0 | | |
| 8 | Incorporating strength training exercises into the training program has positively impacted long-distance running abilities. | Agree | 34 | 28.3 | 4.72 | .453 |
| | | Strongly agree | 86 | 71.7 | | |
| | | Total | 120 | 100.0 | | |
| 9 | The coach considers that the athlete benefits from multidisciplinary support, which includes nutrition guidance, psychological support, and injury prevention. | Disagree | 44 | 36.7 | 3.48 | 1.236 |
| | | Neutral | 7 | 5.8 | | |
| | | Agree | 37 | 30.8 | | |
| | | Strongly agree | 32 | 26.7 | | |
| | | Total | 120 | 100.0 | | |
| 10 | The coach considers the fundamental stage of developing the basic skills of movements and physical literacy of an athlete from the ground up. | Disagree | 91 | 75.8 | 2.58 | 1.074 |
| | | Neutral | 1 | .8 | | |
| | | Agree | 15 | 12.5 | | |
| | | Strongly agree | 13 | 10.8 | | |
| | | Total | 120 | 100.0 | | |
| 11 | A high-volume training program has improved the endurance of long-distance races. | Disagree | 76 | 63.3 | 3.03 | 1.384 |
| | | Agree | 8 | 6.7 | | |
| | | Strongly agree | 36 | 30.0 | | |
| | | Total | 120 | 100.0 | | |
| 12 | The long-term athlete development approach ensures the athlete has ample time to develop their skills, endurance, and mental resilience. | Disagree | 76 | 63.3 | 2.89 | 1.262 |
| | | Neutral | 7 | 5.8 | | |
| | | Agree | 11 | 9.2 | | |
| | | Strongly agree | 26 | 21.7 | | |
| | | Total | 120 | 100.0 | | |

Results associated on Table. 4 indicated that the summery of the long distance long -term athlete development exercise program responses analysis and interpretation. There are many different types of exercise that develop the athlete performance of the long distance athletes. However, from those exercises the researcher gave an attention which were mandatory for each training the coaches consider specifically as follows:-

**High-Intensity Interval Training (HIIT) program**: HIIT can improve various physiological markers associated with endurance performance, such as maximal oxygen uptake (VO2max) and lactate threshold, in both trained and untrained individuals. However, the data shows that 65% of respondents disagree that HIIT has been effective for long-distance athlete development, with a mean of 2.70 and a standard deviation of 1.082. Only 10% agree and 12.5% strongly agree that HIIT has been effective. This indicates that the coaches were not design in their training program about high intensity interval training program for the development of long distance athletes and the athlete were not implement. In addition to the data obtained from the coaches through interviews indicated "*High-intensity interval training (HIIT) was not effectively implemented as intended for long-distance athlete development*." However the researcher believes that HIIT, which involves alternating short bursts of intense exercise with less-intense recovery periods, can be effective in improving cardiovascular fitness, increasing fat burning, and enhancing overall endurance performance. Regarding to this studies indicated that the effectiveness and appropriate application of HIIT for long-distance athlete development remain areas requiring further investigation and careful consideration within the coaching and sport science communities, as indicated by a recent study (Pietzsch & Wallis, 2020).

**Fartlek Training Program:** 8.3% disagree, 13.3% are neutral, 20% agree, and 58.3% strongly agree that Fartlek training has been effective, with a mean of 4.28 and a standard deviation of 0.989. This suggests that fartlek training was a form of interval training that involves varying the pace and intensity of a run in an unstructured manner. Additionally data obtained from coaches through interviews indicates that most of the time the athlete used this techniques to enhancing their performances of long distance athletes. Regarding to this studies indicated that fartlek training in endurance sports, including long-distance running tools, and valued within the coaching and sport science communities as a valuable tool for the development and performance enhancement of long-distance runners alternate between fast and slow paces, allowing them to build both speed and endurance (Smyth, 2018).

**Tempo Runs program:** on the effectiveness of tempo runs for long-distance athlete development tools 11.7% disagree, 13.3% are neutral, 44.2% agree, and 30.8% strongly agree that tempo runs have been effective, with a mean of 3.94 and a standard deviation of 0.955. A majority (75%) of respondents agreed or strongly agreed that tempo runs have been effective for long-distance athlete development tools, with a relatively low percentage (11.7%) disagreeing.

This suggests that tempo runs can be a valuable training tool for improving key physiological factors relevant to long-distance athlete development. Additionally the data collected from the coaches through interviews indicates that "*Tempo run program was an effective for the developments of long distance athletes' developments.*" Regarding to this studies indicated that tempo runs can be a valuable training tool for improving key physiological factors relevant to long-distance athlete development Particularly for well-trained athletes (Casado et al., 2021).

**Long Slow Distance (LSD) Runs program:** 0.8% disagree, 3.3% were neutral, 61.7% agree, and 34.2% strongly agree that LSD runs have been effective, with a mean of 4.29 and a standard deviation of 0.571. which shows an exceptionally high level of agreement (95.9%) among respondents that LSD runs have been effective for long-distance athlete development, with only a small percentage (0.8%) disagreeing. In addition to this the data obtained from the coaches through interviews indicated that "*long slow distance run program was mandatory that designed for athlete used."* Regarding to this studies indicated that that LSD runs were widely recognized as a crucial and highly effective training approach for improving the key physiological and performance-related factors relevant to long-distance athlete development (Allan et al., 2017).

**Hill Training Program:** Investigated the impact of incorporating hill training into the training program of well-trained endurance runners for athlete development tools. 10% disagree, 17.5% were neutral, 67.5% agree, and 5% strongly agree that hill training has been effective, with a mean of 3.68 and a standard deviation of 0.724. It was suggested that the data provided shows a generally positive perception of the effectiveness of hill training, with a combined 72.5% of respondents agreeing or strongly agreeing. In addition to this data collected through interviews from the coaches indicates that "*Hill training tools were essential for the development of athletes, especially long-distance runners.*" More over regarding to this studies , it was indicated that hill training, as they demonstrate the potential of this training approach to elicit specific physiological adaptations that were crucial for long-distance running performance (Gilley, 2021).

Overall, the recent research indicates that hill training was generally viewed as an effective training approach, but there may be some nuance or uncertainty within the community regarding its optimal application and integration into the overall training plan for long-distance athletes. The analysis of the survey data on long-distance, long-term athlete development exercises suggests that there is no single best approach. While some techniques, such as Fartlek training and LSD runs, were

more widely accepted as effective, others, like HIIT, were viewed less favorably A balanced and individualized training program that incorporates a variety of methods for most effective approach for long-term athlete development in long-distance athletes. In general, the overall mean of 3.78 indicates a generally positive perception of the long-term athlete development exercises, with a standard deviation of 0.864 suggesting a relatively low degree of variability in the responses.

Table 4. The summary of the long distance long -term athlete development exercise program respondents' responses.

| No, | Item | Alternatives | Frequency | Percent | Mean | Standard deviation |
|---|---|---|---|---|---|---|
| 3.1 | High-intensity interval training program (HIIT) | Disagree | 78 | 65.0 | 2.70 | 1.082 |
| | | Neutral | 15 | 12.5 | | |
| | | Agree | 12 | 10.0 | | |
| | | Strongly agree | 15 | 12.5 | | |
| | | Total | 120 | 100.0 | | |
| 3.2 | Fartlek training program | Disagree | 10 | 8.3 | 4.28 | .989 |
| | | Neutral | 16 | 13.3 | | |
| | | Agree | 24 | 20.0 | | |
| | | Strongly agree | 70 | 58.3 | | |
| | | Total | 120 | 100.0 | | |
| 3.3 | Tempo runs program | Disagree | 14 | 11.7 | 3.94 | .955 |
| | | Neutral | 16 | 13.3 | | |
| | | Agree | 53 | 44.2 | | |
| | | Strongly agree | 37 | 30.8 | | |
| | | Total | 120 | 100.0 | | |
| 3.4 | Long slow distance (LSD) runs program | Disagree | 1 | .8 | 4.29 | .571 |
| | | Neutral | 4 | 3.3 | | |
| | | Agree | 74 | 61.7 | | |
| | | Strongly agree | 41 | 34.2 | | |
| | | Total | 120 | 100.0 | | |
| 3.5 | Hill training | Disagree | 12 | 10.0 | 3.68 | .724 |
| | | Neutral | 21 | 17.5 | | |
| | | Agree | 81 | 67.5 | | |
| | | Strongly agree | 6 | 5.0 | | |
| | | Total | 120 | 100.0 | | |

Results associated on table 5.Provides information about the factors that challenge long-distance, long-term training methods, and athlete development. There are many different factor that affects the long distance athlete developments. However, from those factors the researcher gave an attention which was mandatory for each training the coaches consider specifically types of exercises used for warm-up and

cool-down routines, including dynamic stretching, static stretching, foam rolling, self-myofascial release, and corrective exercises was selected by the researcher and checked.

**Dynamic stretching and static stretching:** The majority of respondents (60.8%) disagreed with using dynamic and static stretching, while 20.8% agreed and 13.3% strongly agreed, and the mean score for this factor was 2.87, with a standard deviation of 1.159, indicating a relatively neutral to the majority negative perception towards using dynamic and static stretching. This indicates that the coaches were not gave direction and principle of worming up and cooling down principles were not applied in their training program for the enhancements of the athlete's long distance development. In addition to this data obtained from the interview also indicates that, "*They do not consider dynamic stretching and static stretching to be tools for the development of athletes for long distance athlete developments."* The researcher believes that dynamic stretching and static stretching tools have an essential for long distance athlete developments and facilitating the performance of athletes. Regarding this, the recent studies examined the existing evidence on the impacts of dynamic and static stretching on various performance measures and injury risk in athletes, including long-distance runners (Faelli et al., 2021). Additionally, the potential risks associated with excessive static stretching, especially before high-intensity activities, contribute to a more negative overall perception (Muanjai et al., 2017).

Generally, the coaches should including dynamic and static stretching program on their plan for the developments of dynamic and static stretching for long-distance athletes. Incorporating a structured warm-up and cool-down routine that includes both dynamic and static stretching exercises could help improve performance and reduce injury risk for these athletes.

**Foam rolling and self-myofascial release:** A large majority of respondents (55%) strongly agreed with using foam rolling and self-myofascial release, while 27.5% agreed. The mean score for this factor was 4.19, with a standard deviation of 1.197, suggesting a generally positive perception towards the use of foam rolling and self-myofascial release for long-distance athlete development. This study examined the existing evidence on the impacts of foam rolling and self-myofascial release techniques on various performance measures for improving flexibility, muscle function, recovery, and injury risk in athletes, including long-distance runners, which are particularly relevant for long-distance athletes who engage in high-volume training programs (Kalichman & David, 2017).

**Corrective exercises:** The responses were more varied for corrective exercises for keeping the body balanced, with 37.5% disagreeing, 17.5% neutral, and 18.3% agreeing. The mean score for this factor

was 2.71, with a standard deviation of 1.246, indicating the majority of the respondents was negative perception towards the use of corrective exercises. This indicates that the coaches were not utilize the correctives exercise for the long distance athlete development in their training programs. The researcher believes corrective exercises are an essential for keeping the balance poster of an athletes and the other parts of the muscles in good posture or physical appearance for the athlete's development tools. Regarding this, some studies support the idea that corrective exercise has crucial aspects for the athlete's balanced physical development (Basar et al., 2019). However, the table suggests that athletes and coaches have a generally positive perception towards the use of foam rolling and self-myofascial release but majority of the respondents were negative perception towards the use of dynamic and static stretching, as well as corrective exercises. The overall mean and standard deviation for the three factors are: mean: 3.26 and standard deviation: 1.201. This suggests a relatively majority of the respondents were positive perception towards the use of these warm-up and cool-down strategies, with some variation in the responses. Ongoing evaluation and adaptation of the training methods were necessary to address the specific needs and preferences of the athletes.

Table 5. The summary of the factors that challenge long distance long-term training methods and athlete development

| 4 | Types of the exercise for worm up and cool down | Alternatives | Frequency | Percent | Mean | Standard deviation |
|---|---|---|---|---|---|---|
| 4.1 | Dynamic stretching and static stretching. | Disagree | 60.8 | 60.8 | 2.87 | 1.159 |
| | | Neutral | 5.0 | 5.0 | | |
| | | Agree | 20.8 | 20.8 | | |
| | | Strongly agree | 13.3 | 13.3 | | |
| | | Total | 100.0 | 100.0 | | |
| 4.2 | Foam rolling and self-myofascial release (flexibility, muscle function, recovery, and injury risk) prevention exercises | Strongly disagree | 11 | 9.2 | 4.19 | 1.197 |
| | | Neutral | 10 | 8.3 | | |
| | | Agree | 33 | 27.5 | | |
| | | Strongly agree | 66 | 55.0 | | |
| | | Total | 120 | 100.0 | | |
| 4.3 | Corrective exercises<br><br>(e.g., addressing muscle balances, postural correction). | Strongly disagree | 19 | 15.8 | 2.71 | 1.246 |
| | | Disagree | 45 | 37.5 | | |
| | | Neutral | 21 | 17.5 | | |
| | | Agree | 22 | 18.3 | | |
| | | Strongly agree | 13 | 10.8 | | |
| | | Total | 120 | 100.0 | | |

Result associated on **table 6**. Indicated that highlight the key factors that challenge long-distance, long-term training methods, and athletes' development. Here's a detailed analysis and discussion of the results

**Access to Training Equipment:** The majority of respondents (65%) strongly disagreed that the club accessed training equipment on time, while 20.8% disagreed. This suggests that timely access to necessary training equipment was a significant challenge faced by athletes. The mean value of 1.68 indicates that on average, the respondents disagreed with the statement. The high standard deviation of 1.153 suggests a wide range of responses, with a large proportion of respondents strongly disagreeing this suggest that the club has not access to training equipment and facilities for the club. In addition to data obtained from the interviews and observations of the club, there was no access to training equipment for athlete development. Regarding this, some studies indicated that the availability and timely access to appropriate equipment can have a significant impact on the athletes' ability to train effectively and reach their full potential (Woodford & Bussey, 2021). This review emphasizes the importance of incorporating strength training equipment, such as barbells, dumbbells, and resistance machines, to improve the physiological factors that contribute to long-distance running performance, including running economy, speed, and endurance.

**Club's Own Gymnasium Center:** An overwhelming majority of respondents (89.2%) strongly disagreed that the club has its own gymnasium center, while 9.2% disagreed. The lack of a dedicated gymnasium center within the club's facilities was a major challenge for long-term, long-distance training. The mean value of 1.13 and the low standard deviation of 0.379 indicate that the majority of respondents strongly disagreed that the club has its own gymnasium center. The data collected from the interview also reveals that "*The club does not have its own gymnasium center, and due to this, the club has not registered remarkable results*." This indicates that if the club has lack of gymnasium center the athletes were not suspense to develop their endurances, strength and flexibility of their body was weak.

**Training Supplies Comfort:** A large majority of respondents (85.8%) strongly disagreed that the training supplies provided by the club were comfortable for training, while 13.3% disagreed. The mean value of 1.16 and the low standard deviation of 0.430 suggest that the majority of respondents strongly disagreed that the training supplies provided by the club were comfortable for training. This indicated that the discomfort of the training supplies provided by the club was another factor that can negatively impact the athletes' long-term training and development. In addition to this data obtained from the

interview and observation of the infrastructure of the club indicates that there was lack of suitable areas and materials deficiency.

**Use of Gym Equipment for Long-Distance Performance Development:** The majority of respondents (94.2%) strongly disagreed that the coach uses the gym to develop long-distance performance by using gym equipment. while 5.8% disagreed. The mean value of 1.06 and the low standard deviation of 0.235 indicate that the vast majority of respondents strongly disagreed with this statement. This suggested that the athletes did not use the gymnasium for the developments of long distance performance developments. in addition to data collected from the coaches through interviews and observations the athletes did not use in gymnasium and there was no access of gymnasium and their equipment's in the areas due to this the athlete does not functional with gymnasium for the long distance athlete developments. However, recent studies indicated that the current practices and perceptions of endurance coaches regarding the integration of gym-based conditioning for the development of long-distance performance (Freitas et al., 2022). The researcher, based on his observation of materials, concluded that gym equipment were not well equipped. For this reason, the coaches didn't consider integrating targeted gym-based conditioning into their training programs to optimize their athletes' physical capabilities and long-distance performance.

**Balance between Training Load and Recovery Time:** A majority of respondents (67.5%) disagreed that there was a balance between training load and recovery time, while 10% strongly disagreed. The mean value of 2.39 suggests that on average, the respondents disagreed that there was a balance between training load and recovery time. The standard deviation of 1.056 indicates a moderate spread in the responses. This suggests that the athletes' training load and recovery time were not well-balanced, which can lead to overtraining and impede their long-term development. Data obtained through the interview also indicated that "*there was no balance between their recovery and training due to the lack of facilities and infrastructure for the recovery to enhance the performance of the athletes*." Regarding this, the study stated an important point about the balance between training load and recovery time for long-distance athletes (Gilley, 2021).

**Individualization concern:** 30% of respondents strongly disagreed, and 37.5% disagreed that there was a lack of individualization training methods. The mean value of 2.48 indicates that on average, the respondents disagreed that the coaches showed individualization concern. The high standard deviation of 1.444 suggests a wide range of responses, with some respondents strongly disagreeing and others agreeing.

This indicated that the coaches did not concern about the individual abilities, needs and performance of an athletes in their training approaches for long distance athletes. In addition to this data obtained from the coaches through the interview indicated that "*The plan does not exist or include an individual's needs and abilities separately.*" This indicates that the training methods were not tailored to the individual needs of the athletes, which could hinder their long-term development. Individualization was a critical issue that has received significant attention in recent sports science research. This emphasizes the importance of individualized training for elite athletes, highlighting the need to account for individual differences in factors such as physiology, biomechanics, and psychology to optimize performance and long-term development (Jayanthi et al., 2022).

**Sufficient Monitoring and Feedback:** 51.6% disagreed or strongly disagreed that there was insufficient monitoring and feedback in their training programs. (45%) agreed or strongly agreed that there was a sufficient monitoring and feedback program. The mean value of 3.03 suggests that on average, the respondents were neutral or slightly agreed that there was sufficient monitoring and feedback. The high standard deviation of 1.495 indicates a wide range of responses, with some respondents disagreeing and others strongly agreeing The researcher conducted interviews with coaches to understand the current practices and challenges related to monitoring and feedback was indicated that "*The importance of monitoring and feedback for the improvement of the weak side and continuing the strong side of the athlete means that monitoring and feedback have an essential role in the athlete's development program."* Regarding to this study, indicated that the importance of enhancing athlete development through effective monitoring and feedback practices (Bourdon et al., 2017).

**Coach Collaboration with Sport Scientists and Utilization Experts:** 8.3% of respondents strongly disagreed and 51.7% disagreed that there was a lack of collaboration between coaches and sport scientists and utilization experts. This indicates that the absence of such collaboration has been a challenge in optimizing long-term training methods and athlete development on the program of the coaches.

The mean value of 2.93 suggests that on average, the respondents disagreed that the coaches collaborated with sport scientists and utilization experts. The high standard deviation of 1.401 indicates a wide range of responses, with some respondents strongly disagreeing and others strongly agreeing. In addition to this data obtained through interviews indicate that "*The coaches' collaboration with sport scientists and utilization experts has a limitation by the lack of supportive stake holders was not participated or invited on the program of training long distance athlete developments.*" However, regarding this study, it indicated that enhancing interdisciplinary collaboration for high-performance of long distance athlete development (DeWeese et al., 2023).

Overall, the data suggests significant challenges faced by the club in providing adequate training facilities, equipment, and support for the athletes. The mean values and standard deviations highlight the widespread dissatisfaction among the respondents across various aspects of the club's operations and athlete support systems.

**Table 6**. Summary of the factors that challenge long distance long-term training methods and athlete's development respondents' responses

| No, | Item | Alternatives | Frequency | Percent | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| 1 | The club accessed training equipment on time. | Strongly disagree | 78 | 65.0 | 1.68 | 1.153 |
| | | Disagree | 25 | 20.8 | | |
| | | Agree | 12 | 10.0 | | |
| | | Strongly agree | 5 | 4.2 | | |
| | | Total | 120 | 100.0 | | |
| 2 | The club has its own gymnasium center. | Strongly disagree | 107 | 89.2 | 1.13 | .379 |
| | | Disagree | 11 | 9.2 | | |
| | | Neutral | 2 | 1.7 | | |
| | | Total | 120 | 100.0 | | |
| 3 | The training supplies that the club gives you are comfortable for training. | Strongly disagree | 103 | 85.8 | 1.16 | .430 |
| | | Disagree | 16 | 13.3 | | |
| | | Agree | 1 | .8 | | |
| | | Total | 120 | 100.0 | | |
| 4 | The coach uses the gym to develop long-distance performance by using gym equipment. | Strongly disagree | 113 | 94.2 | 1.06 | .235 |
| | | Disagree | 7 | 5.8 | | |
| | | Total | 120 | 100.0 | | |
| 5 | balance between training load and recovery time | Strongly disagree | 12 | 10.0 | 2.39 | 1.056 |
| | | Disagree | 81 | 67.5 | | |
| | | Neutral | 3 | 2.5 | | |
| | | Agree | 16 | 13.3 | | |
| | | Strongly agree | 8 | 6.7 | | |
| | | Total | 120 | 100.0 | | |
| 6 | The coaches Individualization concern. | Strongly disagree | 36 | 30.0 | 2.48 | 1.444 |
| | | Disagree | 45 | 37.5 | | |
| | | Neutral | 2 | 1.7 | | |
| | | Agree | 19 | 15.8 | | |
| | | Strongly agree | 18 | 15.0 | | |
| 7 | Sufficient monitoring and feedback. | Strongly disagree | 19 | 15.8 | 3.03 | 1.495 |
| | | Disagree | 43 | 35.8 | | |
| | | Neutral | 4 | 3.3 | | |
| | | Agree | 23 | 19.2 | | |
| | | Strongly agree | 31 | 25.8 | | |
| | | Total | 120 | 100.0 | | |
| 8 | Coach collaboration with sport scientists and utilization experts. | Strongly disagree | 10 | 8.3 | 2.93 | 1.401 |
| | | Disagree | 62 | 51.7 | | |
| | | Neutral | 3 | 2.5 | | |
| | | Agree | 16 | 13.3 | | |
| | | Strongly agree | 29 | 24.2 | | |
| | | Total | 120 | 100.0 | | |

Results associated on **Table 7.**Indicated that the summary of the provided data presents the respondents of responses regarding various aspects of their teaching methodology for long-distance athletes. The analysis of this data can provide valuable insights into the current practices and perspectives of these coaches.

**The coaches implement technical training in each session:** The majority of coaches (76.6%) either strongly disagree (43.3%) or disagree (33.3%) that the coaches implement technical training that was necessary in each training session. The mean score of 2.03 and standard deviation of 1.229 indicate a wide range of opinions among the coaches. This suggested that the coaches didn't implement on their training session especially in dynamic and statics stretching and worm up and cool down routine the coaches was not use different types of routines in their training program for long distance athlete developments and training methods and also they prioritize other aspects of coaching, such as tactical, physical, or mental development. In addition data obtained through interviews with the coaches indicates that "*Technical training was necessary in each session of the coaching philosophy the techniques' that we have used different types but Accordining to the interviews we were not used properly in the training program.*" However, regarding this, some recent evidence indicates that technical training has a major impact on the enhancements in each training session (Ibrahim et al., 2017).

**Application of athlete-centered coaching methods:** The coaches were divided on the use of athlete-centered coaching methods, with 68.3% either strongly disagreeing (30.8%) or disagreeing (37.5%) that they apply such methods most of the time. The mean score of 2.44 and standard deviation of 1.431 suggest that there was a significant variation in the coach (A García-Hermoso, AM Alonso-Martínez, 2020 ). This indicated that the training approaches of the coaches were not to athlete-centered coaching methods. Data obtained through interviews from the respondents indicate that "*Most of the time the coaches' gave orders and commands for the athlete not goes with the athlete levels and performance of an athletes.*" However, some recent studies can enhance the findings regarding the application of athlete-centered coaching methods (Moen & Federici, 2017).

**Regular analysis of performance progress:** The majority of respondents (90.8%) either strongly disagree (60.0%) or disagree (30.8%) that they analyze the progress of performance regularly. The mean score of 1.59 and standard deviation of 0.948 indicate a strong consensus among the coaches on

this suggest that the coaches not regularly analyzing their athletes' performance progress. In this regard, the data collected from the interview also reveals that "*a significant gap in the regular analysis of athlete performance progress among the surveyed analyses of the performance of the athletes were periodically*

*Present.*" However, recent studies indicated that enhancing coach effectiveness through data-driven performance regularly analysis was a crucial aspect (Benito Santos et al., 2018).

**Long-term planning and problem-solving:** The majority of respondents (89.2%) either strongly disagree (30.0%) or disagree (59.2%) that they have different plans to improve athletes' performance and find solutions for current issues on a long-term basis. The mean score of 3.03 and standard deviation of 1.495 suggest that there was significant variation in the coaches' approaches to long-term planning and problem-solving. This indicates that the majority of coaches surveyed do not engage in comprehensive long-term planning and problem-solving to address athlete performance improvement and current issues. Data collected through the interview a coach said that *"we haven't structured long-term planning for the current issue raised*." However, recent studies indicated that enhancing coach effectiveness through strategic planning and problem-solving (Houchens et al., 2017).

By addressing the gaps in long-term planning and problem-solving among coaches, sports organizations can foster a more strategic, adaptable, and impactful coaching culture, ultimately leading to sustained improvements in athlete development and performance.

**Methods to sustain performance on competition day:** The data shows a strong consensus among the respondents regarding the lack of methods to sustain their athletes' performance on competition day. The majority of respondents (91.6%) either strongly disagree (65.8%) or disagree (25.8%) that they use a method to sustain their athletes' performance on competition day. The mean score of 1.94 and standard deviation of 0.938 further reinforce this finding.

The interview data collected from the coaches also revealed a "lack of awe in the athletes during competition." This aligns with studies that discuss various psychological and behavioral techniques coaches can use to help their athletes perform under pressure on competition day, such as pre-performance routines, cognitive-behavioral interventions, and arousal regulation strategies. However, the current data suggests that coaches may not be effectively implementing these strategies to support their athletes' performance on competition day (Cotterill & Simpson, 2018).

**Incorporating Strength and Conditioning Exercises**: The data shows a strong consensus among the coaches regarding the positive impact of incorporating strength and conditioning exercises into their training routines for long-distance athletes. The vast majority of coaches (98.3%) either agree (12.5%) or strongly agree (85.8%) that this approach has positively impacted their athletes. The mean score of 4.83 and standard deviation of 0.496 further reinforce this finding. Recent research can provide additional context and support for these findings. Studies have shown that strength and conditioning exercises can be effective in enhancing various aspects of endurance performance, such as improving running economy, increasing power output, and developing the muscular strength and resilience necessary for prolonged endurance events. Integrating these training modalities into the overall training plan of long-distance athletes can be a valuable strategy for improving their development and performance (Weldon et al., 2021).

The overall mean of 2.73 and standard deviation of 1.43 indicate a moderate level of variation in the coaches' responses and a general tendency towards a more neutral or mixed approach to their teaching methodology. The data presented provides valuable insights into the current practices and perspectives of long-distance coaches regarding various aspects of their teaching methodology.

**Table 7**. The summary of teaching methodology of coaches on long term athlete development responses.

| No, | Item | Alternatives | Frequency | Percent | Mean | Standard. Deviation |
|---|---|---|---|---|---|---|
| 1 | The coaches implement technical training in each session. | Strongly disagree | 52 | 43.3 | 2.03 | 1.229 |
| | | Disagree | 40 | 33.3 | | |
| | | Neutral | 8 | 6.7 | | |
| | | Agree | 12 | 10.0 | | |
| | | Strongly agree | 8 | 6.7 | | |
| 2 | A coach applies athlete-centered coaching methods most of the time in training sessions. | Strongly disagree | 37 | 30.8 | 2.44 | 1.431 |
| | | Disagree | 45 | 37.5 | | |
| | | Neutral | 4 | 3.3 | | |
| | | Agree | 16 | 13.3 | | |
| | | Strongly agree | 18 | 15.0 | | |
| | | Total | 120 | 100.0 | | |
| 3 | The coach analyzes the progress of performance regularly. | Strongly disagree | 72 | 60.0 | 1.59 | .948 |
| | | Disagree | 37 | 30.8 | | |
| | | Neutral | 3 | 2.5 | | |
| | | Agree | 4 | 3.3 | | |
| | | Strongly agree | 4 | 3.3 | | |
| | | Total | 120 | 100.0 | | |
| 4 | A coach has a different plan to improve athletes' performance and find solutions to current issues over long distances. | Strongly disagree | 36 | 30.0 | 3.03 | 1.495 |
| | | Disagree | 71 | 59.2 | | |
| | | Neutral | 1 | .8 | | |
| | | Agree | 8 | 6.7 | | |
| | | Strongly agree | 4 | 3.3 | | |
| | | Total | 120 | 100.0 | | |
| 5 | Coaches use a method to sustain the performance when competition day approaches. | Strongly disagree | 79 | 65.8 | 1.94 | .938 |
| | | Disagree | 31 | 25.8 | | |
| | | Neutral | 4 | 3.3 | | |
| | | Agree | 6 | 5.0 | | |
| | | Total | 120 | 100.0 | | |
| 6 | Incorporating strength and conditioning exercises into training routines has positively impacted long-distance athletes. | Disagree | 2 | 1.7 | 4.83 | .496 |
| | | Agree | 15 | 12.5 | | |
| | | Strongly agree | 103 | 85.8 | | |
| | | Total | 120 | 100.0 | | |

**Table 8**. **Observation checklist table summary and results.**

Based on the provided information, the observation checklist table appears to use a rating scale from 5 to 1, with 5 being the highest rating and 1 being the lowest. The table likely evaluates various aspects of the athletic training program, including planning, facilities, equipment, and the overall environment and engagement of the coaches and athletes. The "Remark" column likely provides additional comments or observations related to the specific items being assessed.

**Planning and development:** The observation checklist table indicates that the macro, meso, and micro cycle planning, as well as the overall developmental plan for endurance, strength, power, and fitness, were all rated poorly at a 2. This suggests that there is a need for substantial improvement in the program planning and design aspects of the athletic training program.

Additionally, the training session planning and implementation were also rated poorly at a 2, which implies issues with the execution and delivery of the training. This further highlights the need to strengthen the planning and developmental components of the training program to ensure more effective implementation and delivery. The low ratings in these areas suggest that the program's planning and development processes require significant attention and refinement to better support the overall training and development of the athletes.

**Sport wear and coach-athlete dynamics:** The observation checklist table indicates that the sport wear for coaches, assistant coaches, and athletes was only rated as satisfactory at a 3, suggesting room for improvement in this area. Additionally, the coach-athlete relationship and the athletes' interest in and engagement in the training activities were also rated as satisfactory at a 3. This implies the need to strengthen these crucial elements of the training program.

**Facilities and equipment:** The training facilities and equipment, such as the running track, starting blocks, and lanes, were rated as satisfactory at a 3. However, the well-equipped gymnasium was rated very poorly at a 1, suggesting a significant lack of necessary and appropriate training resources. The mixed ratings in the facilities and equipment section indicate that while some aspects of the training environment be adequate, there were significant deficiencies in the availability and quality of key training resources, particularly in the gymnasium, which was an important component of the overall training program.

Generally, the assessment paints a concerning picture of the athletic training program, with widespread deficiencies across multiple crucial areas:

**Planning and development**: Weak macro, meso, and micro cycle planning, as well as issues with training session planning and implementation, indicating the need for substantial improvement in the program's planning and design processes.

**Facilities and equipment**: Satisfactory ratings for some training facilities, but a significant lack of necessary and appropriate resources, particularly in the gymnasium, which was a critical component.

**Sport wear and coach-athlete dynamics**: Only satisfactory ratings for sport wear, coach-athlete relationship, and athlete engagement, suggesting room for strengthening these important elements. The club was absolutely right that addressing these systematic issues should be a top priority. A comprehensive review and overhaul of the program, with a focus on improving the key areas identified, would be crucial to creating an environment that truly supports the athletes' development and performance. Implementing these changes in a holistic manner will be essential to ensure the athletes have access to the necessary resources, guidance, and positive dynamics to maximize their potential and succeed in their competitive endeavors.

**Table 8 Observation checklist quantifiers result: Excellent=5, Very good=4, Good=3, Faire=2, Not faire=1,**

| No | Item | 5 | 4 | 3 | 2 | 1 | Remark |
|---|---|---|---|---|---|---|---|
| 1 | **Planning** | | | | | | |
| | Plan/train program (Macro cycle plan, Mesocycle plan, and Microcycle plan). | | | | ✓ | | |
| | Developmental plan (endurance, strength, power, fitness) | | | | ✓ | | |
| | Training Session Plan and Implementation | | | | ✓ | | |
| 2 | **Facilities and equipment (barriers).** | | | | | | |
| | running track | | | ✓ | | | |
| | Starting blocks | | | ✓ | | | |
| | Lanes | | | ✓ | | | |
| | Well-equipped gymnasium | | | | | ✓ | |
| 2.1 | **Sport wear** | | | | | | |
| | Coaches | | | ✓ | | | |
| | Assistance coach | | | ✓ | | | |
| | Athletes | | | ✓ | | | |
| 3 | Coach athlete relation | | ✓ | | | | |
| 4 | Interests of an athlete to perform give activity | | ✓ | | | | |

## 4.4. Interpretation of the interview with the athletic club's coaches.

**Interview no** 1. Based on the information provided, there were the researcher interpretation of the interview with the long-distance athlete development and training methodology with the Woliso Town's athlete's club coaches:-

**Demographic Characteristics: -** The respondents were 2 males (R1 and R2) and 1 female (R3).

**Qualifications and Experience of the Coaches: -** The coaches (R1, R2, and R3) hold first-degree qualifications in health and physical education. They have 7 years of experience in athletic coaching. The Woliso Town Athlete Club has a relatively inexperienced coaching staff.

This suggests that the coaching staff at the Woliso Town Athlete Club has some formal educational qualifications in the relevant field, as well as several years of practical coaching experience. However,

the coaches acknowledge that the overall coaching staff at the club was relatively inexperienced, which could potentially impact the quality and effectiveness of the athlete development and training program.

The level of coaching experience and qualifications was an important factor in shaping the training methodology and approach used by the club. The relatively inexperienced coaching staff indicate a need for continued professional development, mentorship, or the recruitment of more experienced coaches to strengthen the overall coaching capabilities of the club.

**Interview no 2**. Based on the additional information provided, here was the researcher interpretation of the training methodology of the Woliso Town Athlete Club:

**Training methodology:** The coaches (R1, R2, and R3) utilize training methods that were based on their own personal experiences rather than formal training or evidence-based practices. R1 and R2 explicitly stated that they lack formal training or evidence-based practices, and instead rely on their own personal experiences. R3 mentioned having a certificate, but also acknowledged a lack of infrastructure and facilities to properly implement the training methodology.

**Training schedule:** The athletes were trained three days a week, from 1:00 to 2:00 pm, for one hour each session. The information suggests that the training methodology at the Woliso Town Athlete Club was heavily reliant on the personal experiences and knowledge of the coaches, rather than being grounded in formal training or research-backed best practices. While R3 has some formal certification, the lack of adequate infrastructure and facilities appears to be a significant challenge in implementing a more structured, evidence-based approach.

This raises concerns about the overall effectiveness and efficiency of the training program, as well as the long-term development and performance of the athletes. The coaches' reliance on personal experiences rather than established, research-backed methodologies limit the athletes' progress and prevent them from reaching their full potential. To address these issues, the club benefit from investing in the professional development of the coaching staff, providing access to formal training and education on evidence-based practices, and ensuring the necessary infrastructure and facilities are in place to support the implementation of a more comprehensive, athlete-centered training program.

**Interview no** 3. Based on the information provided in the third interview, it appears that the Woliso Town Athlete Club faces significant challenges in implementing effective long-distance, long-term training methods for their athletes:

**Lack of individualized approach**: The club has prepared a single training plan for all athletes, rather than an individualized approach that accounts for the specific needs and developmental stages of each athlete.This lack of individualization were echoed by both R1 and R3, suggesting it was a widespread issue within the club's training methodology.

**Lack of facilities and infrastructure:** According to R2, the club has a significant lack of facilities and infrastructure, especially the materials needed to prepare athletes for strength and endurance training. The club was particularly limited in its lack of a gymnasium and other resources to support athlete recovery, nutrition, and overall training. These factors suggest that the Woliso Town Athlete Club was severely constrained in its ability to implement comprehensive, long-term training methods that were tailored to the specific needs and developmental stages of its athletes, particularly elite-level performers. The absence of individualized training plans and the lack of essential facilities and equipment were likely to hinder the club's ability to effectively prepare its athletes for long-distance competitions and support their long-term development.

To address these challenges, the club need to prioritize investments in its training facilities, equipment, and the professional development of its coaching staff to enable the implementation of more evidence-based, athlete-centered training approaches. Adopting an individualized training methodology and ensuring access to the necessary resources would be crucial steps in enhancing the club's long-distance, long-term training outcomes.

**Interview no.** 4. Based on the additional information provided, it is clear that the Woliso Town Athlete Club faces significant challenges in structuring their training programs to ensure the long-term development of their long-distance athletes:

**Lack of individualized, periodized training plans**: The respondents (R1, R2, and R3) highlighted the lack of individualized, periodized training plans at the club. This suggests that the training programs were not tailored to the specific needs, abilities, and developmental stages of each individual athlete, which was crucial for long-term success in long-distance events.

**Gaps in coaches' knowledge of long-distance running techniques and methods**: The respondents also indicated that the coaches at the Woliso Town Athlete Club have knowledge gaps in fundamental long-distance running techniques and training methods. This lack of expertise and understanding of best practices in long-distance training can seriously undermine the effectiveness of the club's training programs. These two key issues - the absence of individualized, periodized training plans and the coaches' limited knowledge of long-distance running were likely to have a significant impact on the long-term development and performance of the club's long-distance athletes.

To address these challenges, the Woliso Town Athlete Club should consider the following:

- Invest in the professional development of the coaching staff, providing them with formal training and education on evidence-based long-distance running techniques and training methodologies.

- Implement a comprehensive, periodized training program that is tailored to the individual needs and developmental stages of each athlete, ensuring that their unique strengths, weaknesses, and goals are accounted for.
- Develop a structured system for regularly monitoring, evaluating, and adjusting the training plans to ensure they remain effective and responsive to the athletes' evolving needs over the long term.

By addressing these key structural and knowledge gaps, the Woliso Town Athlete Club can significantly enhance the long-term development and success of their long-distance athletes, positioning them for sustained performance and achievement.

**Interview no. 5:** Based on the additional information provided, it was clear that the Woliso Town Athlete Club faces significant challenges in effectively monitoring and tracking the progress of their long-distance athletes throughout their development:

**Lack of comprehensive monitoring and tracking system**: The respondents (R1, R2, and R3) explicitly stated that the club does not have a comprehensive system in place to monitor and track the progress of their long-distance athletes. These were lack of structured monitoring and tracking approach was a major concern, as it limits the club's ability to identify areas for improvement, make data-driven decisions, and ensure the long-term development of their athletes.

**Absence of testing and problem identification tools:** The respondents highlighted the club's lack of testing and problem identification materials or methods were essential for objectively assessing the athletes' progress and identifying any issues or areas needing attention. Without these crucial tools, the coaches were unable to gather the necessary data to inform their training and development strategies.

**Lack of recovery monitoring:** According to R3, the club does not have a system in place to monitor the athletes' recovery after training sessions or competitions. Proper recovery monitoring was crucial for long-distance athletes, as it helps to prevent overtraining, minimize the risk of injury, and ensure that athletes can maintain their performance levels over the long term.

These significant gaps in the club's athlete monitoring and tracking capabilities were likely to have a detrimental impact on the long-term development and success of their long-distance athletes.

To address these challenges, the Woliso Town Athlete Club should consider the following measures:-

- Develop and implement a comprehensive athlete monitoring and tracking system that incorporates regular testing, performance assessments, and recovery monitoring.
- Provide training and education to the coaching staff on the effective use of these monitoring and tracking tools, as well as how to interpret the data to inform their training and development strategies.

By addressing these critical gaps in their athlete monitoring and tracking capabilities, the Woliso Town Athlete Club can significantly enhance its ability to support the long-term development and success of its long-distance athletes.

**Interview No. 6**: Based on the additional information provided from the interviewers, it is clear that the Woliso Town Athlete Club was not adequately supporting the overall growth and well-being of their long-distance athletes beyond just their athletic development:

**Lack of mental health support:** According to the respondent (R1), the club does not have a professional psychiatrist or mental health specialist on staff to support the athletes' mental health. This was a significant gap, as mental health was a crucial aspect of an athlete's overall well-being and can have a profound impact on their performance and long-term success.

**Holistic athlete development approach:** Respondents R2 and R3 emphasized that holistic athlete development encompasses not only the physical and technical aspects but also the mental, emotional, and social well-being of the athletes. This suggests that the club's focus is primarily on the athletic development of the long-distance runners, without adequate attention to their overall personal growth and well-being.

The lack of comprehensive support for the long-distance athletes' mental health and overall well-being beyond just their athletic development was a serious concern. This narrow focus on physical and technical development can limit the athletes' ability to reach their full potential and may even put their long-term well-being at risk. To address these gaps, the Woliso Town Athlete Club should consider the following measures:

**Incorporate mental health support into the club's athlete development program** by:

- Hiring a qualified mental health professional (e.g., sports psychologist, counselor) to work with the athletes on a regular basis.
- Providing mental health awareness and coping strategies training for the athletes and coaching staff.
- Integrating mental health assessments and support as a standard part of the athlete monitoring and tracking system.

**Adopt a more holistic approach to athlete development by**

- Expanding the club's support services to include nutritional counseling, life skills training, and social/community engagement opportunities.
- Encouraging the athletes to develop a balanced lifestyle that addresses their physical, mental, emotional, and social needs.
- Fostering an organizational culture that prioritizes the overall well-being of the athletes, not just their athletic performance.

By addressing the gaps in mental health support and adopting a more comprehensive, holistic approach to athlete development, the Woliso Town Athlete Club can better support the long-term growth, well-being, and success of their long-distance runners.

**Interview no. 7:** Based on the information provided, the long-distance athletes at the Woliso Town Athlete Club face several significant external factors that pose challenges to their long- distance long-term athletic development:

**Insufficient financing and inadequate facilities**:

- The club lacks the necessary funding sources, such as government grants, corporate sponsorships, or community partnerships, to provide adequate facilities and resources for the athletes.
- As a result, the club does not have access to essential infrastructure like a gymnasium, appropriate athletic clothing, tracks, trails, and recovery areas that are crucial for the long-distance athletes' training and development.

**Limited Access to Professional Support:**

- ✓ The club lacks access to professional coaches and healthcare professionals, such as sports medicine specialists, physiotherapists, and nutritionists, who could provide specialized support and expertise to the athletes.
- ✓ The absence of these critical resources directly impacts the athletes' ability to receive comprehensive, evidence-based guidance and care for their physical, nutritional, and recovery needs.
- ✓ These external factors create a challenging environment for the long-distance athletes, hindering their ability to reach their full potential and achieve long-term success in their athletic careers.

To address these external challenges, the Woliso Town Athlete Club should consider the following measures:

**Secure sustainable funding sources:** Actively pursue and secure funding from various sources, such as government grants, corporate sponsorships, and community partnerships, to ensure the club has the necessary financial resources to invest in the required facilities and support services.

**Develop strategic partnerships:** Establish partnerships with local universities, sports medicine clinics, and other relevant organizations to gain access to professional coaches, sports medicine specialists, physiotherapists, nutritionists, and other healthcare professionals who can provide specialized support to the athletes.

**Upgrade facilities and infrastructure:** Utilize the secured funding to upgrade the club's facilities, including the construction of a gymnasium, the provision of appropriate athletic clothing, the development of suitable tracks and trails, and the creation of dedicated recovery areas. Ensure that the

facilities and infrastructure meet the specific needs of long-distance athletes and support their training, recovery, and overall development.

By addressing these external factors, the Woliso Town Athlete Club can create a more favorable environment that enables their long-distance athletes to reach their full potential and achieve long-term success in their athletic careers.

**Interview no. 8:** Based on the information provided, it is evident that the Woliso Town Athlete Club faces several challenges in addressing the potential risks of overtraining and injuries that can impact the long-term development of their long-distance athletes:

**Lack of individualized training approach:** The club's training plan was not tailored to the individual needs and performance variability of the athletes. This one-size-fits-all approach fails to account for the unique physical characteristics, injury history, and recovery needs of each individual athlete, increasing the risk of overtraining and injuries.

**Absence of structured prioritization plan:** The club does not have a structured prioritization plan for their long-distance athletes. Without a clear strategy to identify and support the athletes most at risk of overtraining or injury, the club not be able to allocate resources and interventions effectively.

**Inadequate monitoring and adaptation:** The club likely lacks a comprehensive system to continuously monitor the athletes' performance, health, and recovery status. Without this critical data, the club struggle to identify early warning signs of overtraining or potential injuries, limiting their ability to implement preventive measures or make timely adjustments to the training regimen. These key issues represent core problems in the Woliso Town Athlete Club's approach to managing the risks of overtraining and injuries, which can have a significant impact on the long-term development and success of their long-distance athletes. To address these challenges, the Woliso Town Athlete Club should consider implementing the following recommendations:

**Adopt an individualized training approach:** Develop customized training plans for each long-distance athlete based on their unique physical attributes, injury history, and performance data. Regularly monitor and adjust the training load, intensity, and recovery periods to match the individual needs of the athletes.

**Implement a structured prioritization plan:** Establish a comprehensive risk assessment process to identify the athletes most susceptible to overtraining and injuries. Allocate additional resources, such as increased monitoring, specialized coaching, and targeted interventions, to the high-risk athletes to mitigate the potential for overtraining and injuries.

**Establish a robust athlete monitoring and adaptation system**: Develop a comprehensive athlete monitoring system that tracks various performance metrics, health indicators, and recovery data. Regularly analyze the data to identify early warning signs of overtraining or injury risk, and quickly adapt the training plans and recovery strategies accordingly.

By addressing these key issues and implementing a comprehensive approach to managing the risks of overtraining and injuries, the Woliso Town Athlete Club can create a more sustainable and supportive environment for their long-distance athletes to thrive in the long run.

## 4.5. DISCUSSION

The findings from the survey data with athletes' coaches and other stake holders at the Woliso Town Athlete Club reveal several critical gaps and challenges that must be addressed to support the long-term development and well-being of the club's long-distance runners. The discussion will explore these key issues and provide recommendations to help the club create a more comprehensive and supportive environment for their athletes. The analysis of the survey data on the teaching methodology of coaches for long-distance athletes reveals several noteworthy findings

**Training methodology** the discussion of the findings related to periodization training programs and progressive overload training methods Individualized training programs, Strength and conditioning exercises program suggests disconnect between the research-supported best practices and the club's implementation. The majority of respondents 51% disagreed & mean of 2.69 and stdv. 1.027 This indicated that the coach didn't implement on the training program with such major components of these variables. However, some studies indicated that progressive overload ,periodization training program are essential with the effectiveness of these training approaches, which are widely recognized as essential for optimizing endurance performance and adaptation (L. Bell et al., 2022). Educating coaches on the importance of periodization and progressive overload, and Individualized training programs, Strength and conditioning exercises program providing support for their effective implementation, can help bridge this gap.

Additionally, the data highlighted the need for more individualized training programs that cater to the specific needs and stages of development for different athlete groups. Research has consistently demonstrated the importance of individualized training plans for enhancing the performance and long-term development of endurance athletes (Wackerhage & Schoenfeld, 2021). Implementing a more personalized approach help the club better support the unique requirements of their athletes.

**Athlete Development** the first major finding was the lack of mental health support within the club. The interviews indicate that the club does not have any mental health professionals, counselors, to assist the athletes with the mental and emotional aspects of their development. Research has shown that integrating mental skills training and psychological support can enhance endurance athletes' performance, resilience, and long-term development (Kreher, 2016).

Implementing a holistic approach that addresses the athletes' mental health needs is crucial for helping them reach their full potential. Furthermore, the club appears to struggle with effectively managing the risks of overtraining and injuries, which can have long-term implications for the athletes' development. Individualized training programs tailored to an athlete's specific needs have been beneficial, with a mean of 3.53 and a standard deviation of 1.037. Which indicates that individualized training programs have been beneficial for them. However, data obtained from the coaches through interviews indicates that "*lack of individualized training plans, the club seems to have a "one-size-fits-all" approach rather than tailoring plans to the specific needs and stages of development for different athlete groups."* in addition to , the researcher agree by the idea that an individualized training plan has benefits for the athletes, who have different needs, abilities, and variability in their performances so the coach should prepare the plan for the athlete need and abilities individually . Regarding this, studies have been supported about individualized training programs that consider an athlete's specific needs, abilities, and goals, which have long been recognized as an important factor in the effective development and performance of endurance athletes (Wackerhage & Schoenfeld, 2021).

The lack of an individualized training approach, a structured prioritization plan, and a robust monitoring and adaptation system contribute to these challenges. Implementing evidence-based practices for injury prevention, load management, and athlete monitoring has crucial for reducing the risk of overtraining and optimizing athlete development (Saw et al., 2016).

**Factors affecting training methodology and athlete development**

The long-distance athletes at the club face several external challenges, including insufficient financing and inadequate facilities, as well as limited access to professional support services. And also the overall mean score across the three factors was 3.26, with a standard deviation of 1.201.This suggests a relatively positive perception towards the use of these warm-up and cool-down strategies, but with some variation in the responses. The results highlight that coaches had a generally positive perception towards foam rolling and self-myofascial release, but a more negative perception towards dynamic/static stretching and corrective exercises for long-distance athlete development and training. The researcher emphasizes the importance of incorporating a structured warm-up and cool-down routine that includes both dynamic and static stretching, as well as corrective exercises, to improve performance and reduce injury risk for long-distance athletes.

These factors create a disadvantageous environment that hinders the athletes' ability to train, recover, and progress in their athletic careers. Providing access to adequate resources, infrastructure, and support services is essential for creating an environment conducive to the long-term development of endurance athletes. Designing training programs that account for the developmental stages and physical capabilities of the athletes was crucial for optimizing their long-term development (Côté & Gilbert, 2009).

While there was some lack of consensus on the impact of incorporating strength and conditioning exercises, the literature supports the inclusion of these complementary training modalities for endurance athletes (Nebiker et al., 2018). Educating coaches on the benefits of integrating strength and conditioning into the training regimen can help maximize the athletes' physical development and injury resilience. Overall, the findings from the Woliso Town Athlete Club align with and support the existing research on the importance of a holistic approach to athlete development, which encompasses physical, mental, and environmental factors. The club's challenges in implementing best practices in training methodology and athlete support highlight the need for a more comprehensive and evidence-based approach to fostering long-term success for athlete developments.

## 4.6. Findings of the study

To study the research there three research basic questions were raised. Regarding this the main findings of the research related to research basic question are the following:

1. Basic research question no, 1, which was a long-distance, long-term athlete training method in Woliso Town athlete club.

- ✓ The majority of respondents did not recognize the essential benefits of periodization training methods, progressive over load, individualized training methods, and in improving long-distance long term athletes' successes.
- ✓ The majority of the respondents replied that the coaches did not consider the methodology of exercising to develop the performance of athletes.
- ✓ Woliso Town Athlete Club did not have a well-structured strategic plan for macrocycles, mesocycles, and microcycles of training to implement long-distance, long-term athlete development and training methodology.

2. Basic research question no, two, which was long-distance, long-term athlete development in Woliso Town athlete club.

    - ➢ Regarding these basic questions, the main finding of the research shows that the practices of athletes at the fundamental age stage in the skill development of athletes in the long-term athlete development system of the Woliso Town athlete club were not properly implemented as desired.
    - ➢ There was few practices that emphasize the importance of developing fundamental movement skills and physical literacy in athletes at the grassroots level.
    - ➢ The LTAD program was not designed to provide a pathway for athletes to progress from fundamental movement skills to elite competitive performance over many years.

3. Basic Research number three, which was the factors that challenge the long-distance long-term athlete's development and training methodologies in Woliso Town athlete. In this regard, the main findings indicate.

- ✓ There was a lack of value in providing multidisciplinary support, such as nutrition guidance, psychological support, and injury prevention that aligns with the current best practices in athlete development.
- ✓ The major factors that affect long-term long-distance athlete development were overtraining programs, an imbalance between training load and recovery time, insufficient monitoring and feedback, poor nutrition and hydration practices, and a lack of infrastructure.

These detailed findings indicate significant shortcomings in the long-term athlete development system of the Woliso Town Athlete Club, especially in the areas of training methodology, athlete development practices, and the provision of holistic support for the athletes. Addressing these issues would be crucial for the club to foster the long-term success of their long-distance athletes.

# CHAPTER FIVE

## 5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 5.1. SUMMARY

This study aimed to assess and identify the long distance long-term athlete development and training methods in Oromia regional state south west showa zone Woliso Town Athlete Club, this research tried to investigate and identify factors that challenge long distance long-term athlete's development and training methodologies on woliso town athlete club. Three basic research questions were developed by the researcher and approved by advisor and a review of related literature was conducted using various sources such as websites, books, journals, and reference materials. The study was employed a mixed research methods. The study included all members of the club: - manager, coaches, athletes, experts, and woliso town secondary school physical education teachers. Quantitative data were collected through questionnaires from a total of 120 members from these respondents ( 48 male and 15 female athletes ' 1 male and 1 female, manager , 12male and 5 experts, Sport youth office members 13 males 6 females Woliso town HPE secondary school teacher's 12 males 7 females) selected using census sampling techniques. Qualitative data were collected through interviews from three coaches, and observations of Athlete club infrastructures. The questionnaires were reliability and consistency was checked through a pilot study using Cronbach"s Alpha. Data were analyzed through statistical tools such as frequency, percentage, mean and standard deviation using SPSS version 26. The data from interviews and observations were qualitatively analyzed through narration. Based on the researcher find out the problem faced in the Woliso Town Athlete Club several challenges in implementing effective long-distance long-term athlete development and training methods for their athletes. Lack of individualized training plans, the club seems to have a "one-size-fits-all" approach, rather than tailoring plans to the specific needs and stages of development for different athlete groups. Insufficient facilities and resources, the club was lacking in critical infrastructure, equipment, and support services (e.g., gymnasium, recovery facilities) to fully address the training and development needs of their athletes. While the coaches having a formal education in health and physical education was a good foundation, coaching long-distance athletes requires more specialized knowledge and expertise in areas such as exercise science, sports psychology, injury prevention, and periodized training methodologies.

## 5.2. Conclusion

Drawing from the findings of the researcher's questionnaire, in-depth interview, and club observation, the following fundamental ideas were proposed as a conclusion for long-term, long-distance athlete development and training methodology:

- The results of the current study showed that coaches use mistaken coaching techniques and processes, have limited coaching knowledge and qualifications.
- The study concluded when formulating training plans, coaches should take age-related factors like development, maturation, and injury prevention into account.
- The athletes' age level is not appropriate for the training program. This implies that when creating the training plan, the coach should take the players' age-specific habits, skills, and developmental requirements into account.
- The length of membership can have an impact on the respondents 'Age-related factors: Coaches should consider factors such as growth, maturation, and injury prevention when designing training programs, taking into account the specific needs of athletes at different age levels.

- The educational background of the participants have an impact on their comprehension, viewpoints, and ability to provide feedback regarding the coach's training approach.
- The duration of an athlete's participation in a club can have an impact on how familiar they're with the coach's methods of training and how well-equipped they are to give helpful feedback based on their experience.
- Individualization: Given the wide diversity of viewpoints among participants, coaches and trainers should take into account each athlete's unique demands and preferences when creating periodization training regimens. Tailored training regimens could produce superior outcomes.
- Progressive overload: It has been demonstrated that progressive overload training techniques significantly enhance long-distance performance.

In general, the conclusions drawn from the study emphasize the importance of considering age-related factors, individualization, strength training, rest and recovery, technical training, monitoring and feedback, holistic approaches, and collaboration in long-distance long-term athlete development and training methodology. The study highlights areas for improvement, such as

incorporating more personalized and age-appropriate training programs, utilizing strength training and technical training, providing adequate rest and recovery, implementing monitoring and feedback systems, and fostering athlete involvement and empowerment. Additionally, the study suggests the need for collaboration with sport scientists and other professionals, as well as addressing logistical and organizational issues.

## 5.3. Recommendation

Based on the finding of the study drown the researcher slightly provided the following recommendations to improve the long-distance, long-term athlete development and training program.

- The Individualization of Training Programs did not provided based on the needs and interest of athlete. Therefore the Athletes' coaches of Woliso town club recommended that to address the individual need and interest of individual while training to enhance their performances developments.
- Woliso town athlete club suggested that critically examine the current periodization model being used to identify specific areas for improvement or modification of training methodology.
- To conduct in-depth assessments of each athlete's experience, goals, training history, and physical/physiological capabilities to inform the Woliso town athlete club advised to use short and long term plan training methodology to enhance the performance of athlete competitive.
- Woliso town athlete club coaches do not have necessary qualification and experience for development of the athlete. Therefore, Woliso town administration recommended that to enhance and empower coaches to have more autonomy and flexibility in adjusting program variables (volume, intensity, recovery, etc.) based on individual athlete monitoring and feedback.
- Woliso town Youth and Sport office advised to empower and engage coaches and athletes in the process to better understand the challenges and pain points with the existing periodization programming.
- Woliso athlete club coaches recommended that to explore integrating, collaboration and more individualized progressive overload strategies based on each athlete's response and adaptation.
- Woliso town Youth and Sport office with collaboration of athlete club advised to provide training, necessary materials, infrastructure, regular monitoring and feedback mechanisms to enhance the successes of the athletes club.

# References


Allan, V., Turnnidge, J., & Côté, J. (2017). Evaluating approaches to physical literacy through the lens of positive youth development. *Quest*, *69*(4), 515–530.

Amirrudin, M., & Nasution, K. (2021). *Effect of Variability on Cronbach Alpha Reliability in Research Practice*. *17*(2), 223–230. https://doi.org/10.20956/jmsk.v17i2.11655

Balyi, B. I. (1998). *LONG-TERM ATHLETE DEVELOPMENT : TRAINABILITY IN " It takes 10 years of extensive training to excel in anything " Herbert Simon - Nobel Laureate US Youth Soccer United States Olympic Committee The Model of Long-Term Athlete Development US Youth Soccer Unit*.

Balyi, I., Way, R., & Higgs, C. (2013). *Long-term athlete development*. Human Kinetics.

Balyi, I., Way, R., & Higgs, C. (2020). Long-Term Athlete Development Model. *Long-Term Athlete Development*, 5–18. https://doi.org/10.5040/9781492596318.ch001

Basar, M. J., Stanek, J. M., Dodd, D. D., & Begalle, R. L. (2019). The influence of corrective exercises on functional movement screen and physical fitness performance in army ROTC cadets. *Journal of Sport Rehabilitation*, *28*(4), 360–367.

Bell, L. R., Worn, R., O'Grady, M. W., Denham, J., & O'Brien, B. J. (2024). Progressive overload in cardiorespiratory exercise training for young and old: Is increasing duration or intensity of exercise more important? *Medical Hypotheses*, 111366.

Bell, L., Ruddock, A., Maden-wilkinson, T., & Rogerson, D. (2022). *applied sciences Recommendations for Advancing the Resistance Exercise Overtraining Research*.

Bell L, Ruddock, ;, Tm, M.-W., Rogerson, ;, & D 1. (2020). *Overreaching and Overtraining in Strength Sports and Resistance Training: A Scoping Review RT-Resistance training OR-Overreaching FOR-Functional overreaching NFOR-Non-functional overreaching OTS-Overtraining syndrome*.

Benito Santos, A., Theron, R., Losada, A., Sampaio, J. E., & Lago-Peñas, C. (2018). Data-driven visual performance analysis in soccer: An exploratory prototype. *Frontiers in Psychology*, *9*, 420674.

Borresen, J., & Ian Lambert, M. (2009). The quantification of training load, the training response and the effect on performance. *Sports Medicine*, *39*(9), 779–795. https://doi.org/10.2165/11317780-000000000-00000

Boullosa, D., Esteve-Lanao, J., Casado, A., Peyré-Tartaruga, L. A., Da Rosa, R. G., & Del Coso, J. (2020). Factors affecting training and physical performance in recreational endurance runners. *Sports*, *8*(3), 1–20. https://doi.org/10.3390/sports8030035

Bourdon, P. C., Cardinale, M., Murray, A., Gastin, P., Kellmann, M., Varley, M. C., Gabbett, T. J., Coutts, A. J., Burgess, D. J., & Gregson, W. (2017). Monitoring athlete training loads: consensus statement. *International Journal of Sports Physiology and Performance*, *12*(s2), S2-161.

Bowen, L., Gross, A. S., Gimpel, M., & Li, F. (2016). *Accumulated workloads and the acute : chronic workload ratio relate to injury risk in elite youth football players*. 1–8. https://doi.org/10.1136/bjsports-2015-095820

Brooks, T., & Track, A. (1999). THE LYDIARD TRAINING SYSTEM for LONG and MIDDLE DISTANCE RUNNERS. *Training*.

Browne, P., Sweeting, A. J., Woods, C. T., & Robertson, S. (2021). Methodological Considerations for Furthering the Understanding of Constraints in Applied Sports. *Sports Medicine - Open*, *7*(1). https://doi.org/10.1186/s40798-021-00313-x

Casado, A., González-Mohíno, F., González-Ravé, J. M., & Foster, C. (2022). Training Periodization, Methods, Intensity Distribution, and Volume in Highly Trained and Elite Distance Runners: A Systematic Review. *International Journal of Sports Physiology and Performance*, *17*(6), 820–833. https://doi.org/10.1123/ijspp.2021-0435

Casado, A., Hanley, B., Santos-Concejero, J., & Ruiz-Pérez, L. M. (2021). World-class long-distance running performances are best predicted by volume of easy runs and deliberate practice of short-interval and tempo runs. *The Journal of Strength & Conditioning Research*, *35*(9), 2525–2531.

Chen, Z., Chi, G., Wang, L., Chen, S., Yan, J., & Li, S. (2022). The Combinations of Physical Activity, Screen Time, and Sleep, and Their Associations with Self-Reported Physical Fitness in Children and Adolescents. *International Journal of Environmental Research and Public Health*, *19*(10).

https://doi.org/10.3390/ijerph19105783
Côté, J., & Gilbert, W. (2009). *An Integrative Definition of Coaching Effectiveness and Expertise*. *4*(3), 307–324.
Cotterill, S. T., & Simpson, D. (2018). Routines, Preparation and Performance. In *Sport, Exercise, and Performance Psychology* (pp. 325–340). Routledge.
Daniels, A. C., & Bailey, J. S. (2014). *Column Editor : Anne Blake PERFORMANCE MANAGEMENT : CHANGING BEHAVIOR THAT DRIVES ORGANIZATIONAL EFFECTIVENESS , FIFTH EDITION*. 38–41. https://doi.org/10.1002/pfi
Denadai, B. S., & Greco, C. C. (2018). Resistance training and exercise tolerance during high-intensity exercise: moving beyond just running economy and muscle strength. *Journal of Applied Physiology*, *124*(2), 526–528.
DeWeese, B. H., Hamilton, D. K., Huls, S., Peterson, B. J., Rath, T., & Althoff, A. (2023). Clarifying high performance and the role, responsibilities, and requisite attributes of the high-performance director in American professional sport. *Strength & Conditioning Journal*, *45*(4), 429–438.
Dowling, M., Mills, J., & Stodter, A. (2020). Problematizing the Adoption and Implementation of Athlete Development 'Models': A Foucauldian-Inspired Analysis of the Long-Term Athlete Development Framework. *Journal of Athlete Development and Experience*, *2*(3). https://doi.org/10.25035/jade.02.03.03
Faelli, E., Panascì, M., Ferrando, V., Bisio, A., Filipas, L., Ruggeri, P., & Bove, M. (2021). The effect of static and dynamic stretching during warm-up on running economy and perception of effort in recreational endurance runners. *International Journal of Environmental Research and Public Health*, *18*(16), 8386.
Ferrauti, A., Bergermann, M., & Fernandez-Fernandez, J. (2010). Effects of a concurrent strength and endurance training on running performance and running economy in recreational marathon runners. *Journal of Strength and Conditioning Research*, *24*(10), 2770–2778. https://doi.org/10.1519/JSC.0b013e3181d64e9c
Fleming, P., Young, C., Dixon, S., & Carre, M. (2010). *Athlete and coach perceptions of technology needs for evaluating running performance*. 1–18. https://doi.org/10.1007/s12283-010-0049-9
*for Maximizing*. (2020).
Foster, C., Rodriguez-marroyo, J. A., & Koning, J. J. De. (2017). *Monitoring Training Loads : The Past , the Present , and the Future*. 2–8.
Fredericks, J. J., Fredericks, J. J., Sikes, M., & Schultz, J. (2022). *by*. *August*, 1942–1969.
Freitas, D. C., Silva, G. da M., & Lüdorf, S. M. A. (2022). Social aspects and sports performance: the principle of social-corporeal individuality. *Revista Brasileira de Ciências Do Esporte*, *44*, e005622.
Gilley, K. (2021). *A long-distance running manual for elite female runners*. California State University, Sacramento.
Granacher, U., & Borde, R. (2017). Effects of sport-specific training during the early stages of long-term athlete development on physical fitness, body composition, cognitive, and academic performances. *Frontiers in Physiology*, *8*(OCT), 1–11. https://doi.org/10.3389/fphys.2017.00810
Guetterman, T. (2015). Descriptions of sampling practices within five approaches to qualitative. *Forum: Qualitative Social Research*, *16*(2), 1–24.
Heale, R., Forbes, D., & Heale, R. (2013). *Understanding triangulation in research*. *16*(4), 101494.
Höner, O., Larkin, P., Leber, T., & Feichtinger, P. (2023). Talent Identification and Development in Sport. *Sport and Exercise Psychology: Theory and Application*, *7*(1), 549–581. https://doi.org/10.1007/978-3-031-03921-8_23
Horne, J., & Whannel, G. (2020). *Understanding the olympics*. Routledge.
Houchens, G. W., A. Stewart, T., & Jennings, S. (2017). Enhancing instructional leadership through collaborative coaching: a multi-case study. *International Journal of Mentoring and Coaching in Education*, *6*(1), 34–49.
Ibrahim, R., Boerhannoeddin, A., & Bakare, K. K. (2017). The effect of soft skills and training methodology on employee performance. *European Journal of Training and Development*, *41*(4), 388–406.
Id, K. J., & Baker, J. (2022). *Sources of information used by elite distance running coaches for selection decisions*. 1–21. https://doi.org/10.1371/journal.pone.0268554
Issurin, V. B. (2016). Benefits and Limitations of Block Periodized Training Approaches to Athletes' Preparation: A Review. *Sports Medicine*, *46*(3), 329–338. https://doi.org/10.1007/s40279-015-0425-5
Jayanthi, N., Schley, S., Cumming, S. P., Myer, G. D., Saffel, H., Hartwig, T., & Gabbett, T. J. (2022). Developmental training model for the sport specialized youth athlete: a dynamic strategy for individualizing load-response during maturation. *Sports Health*, *14*(1), 142–153.

Jeffreys, I. (2021). *Warm-up*.
Jena, M. K. (2020). *Mapping Traditional Games & Sports of Relevant Tribes of 3 Tribal Dominated States of India*.
Jones, C. M., Griffiths, P. C., & Mellalieu, S. D. (2017). Training Load and Fatigue Marker Associations with Injury and Illness: A Systematic Review of Longitudinal Studies. In *Sports Medicine* (Vol. 47, Issue 5). Springer International Publishing. https://doi.org/10.1007/s40279-016-0619-5
Kalichman, L., & David, C. Ben. (2017). Effect of self-myofascial release on myofascial pain, muscle flexibility, and strength: A narrative review. *Journal of Bodywork and Movement Therapies*, *21*(2), 446–451.
Kraemer, W. J., Ratamess, N. A., Flanagan, S. D., Shurley, J. P., Todd, J. S., & Todd, T. C. (2017). Understanding the Science of Resistance Training: An Evolutionary Perspective. *Sports Medicine*, *47*(12), 2415–2435. https://doi.org/10.1007/s40279-017-0779-y
Kreher, J. B. (2016). *Diagnosis and prevention of overtraining syndrome : an opinion on education strategies Diagnosis and prevention of overtraining syndrome : an opinion on education strategies*. https://doi.org/10.2147/OAJSM.S91657
*LACTATE PROFILE AND 5-KILOMETER TIME TRIAL PERFORMANCE IN*. (2015).
Largo, D. A., Del, P., & Modelo, D. E. L. (2018). *LONG-TERM ATHLETE DEVELOPMENT , FROM THEORETICAL AND PRACTICAL MODEL TO COGNITIVE PROBLEM*. *72*(2), 148–160. https://doi.org/10.5937/fizkul1902190R
Luczak, T., Burch, R., Lewis, E., Chander, H., & Ball, J. (2020). *State-of-the-art review of athletic wearable technology : What 113 strength and conditioning coaches and athletic trainers from the USA said about technology in sports*. https://doi.org/10.1177/1747954119885244
Mesfen, A., Timerga, G., Berhan, D., & Berhan, D. (2016). *Identify Factors that Affect Distance Runner Performance in the Case of Debre Berhan , Addis Abeba and Arsi Zone Asela Bekoji ,*. 30–38.
Moen, F., & Federici, R. A. (2017). Can athlete-centered coaching stimulate need satisfaction and prevent athlete burnout? *International Journal of Sport Management*, *18*(1).
Montoro-Bombú, R., Sarmento, H., Buzzichelli, C., Moura, N. A., Gonzáles Badillo, J. J., Santos, A., & Rama, L. (2023). Methodological considerations for determining the volume and intensity of drop jump training. A systematic, critical and prepositive review. *Frontiers in Physiology*, *14*(April). https://doi.org/10.3389/fphys.2023.1181781
Muanjai, P., Jones, D. A., Mickevicius, M., Satkunskiene, D., Snieckus, A., Skurvydas, A., & Kamandulis, S. (2017). The acute benefits and risks of passive stretching to the point of pain. *European Journal of Applied Physiology*, *117*, 1217–1226.
Mujika, I., Halson, S., Burke, L. M., Balagué, G., & Farrow, D. (2018). An integrated, multifactorial approach to periodization for optimal performance in individual and team sports. *International Journal of Sports Physiology and Performance*, *13*(5), 538–561.
Muzari, T., Shava, G. N., & Shonhiwa, S. (2022). Qualitative Research Paradigm , a Key Research Design for Educational Researchers , Processes and Procedures : A Theoretical Overview. *Indiana Journal of Humanities and Social Sciences*, *3*(1), 14–20.
Nebiker, L., Lichtenstein, E., Minghetti, A., Zahner, L., Gerber, M., Faude, O., & Donath, L. (2018). Moderating effects of exercise duration and intensity in neuromuscular vs. endurance exercise interventions for the treatment of depression: a meta-analytical review. *Frontiers in Psychiatry*, *9*, 305.
Newell, K. M., Rovegno, I., & Rudd, J. (2021). *Teaching Children ' s Motor Skills for Team Games Through Guided Discovery : How Constraints Enhance Learning*. *12*(December), 1–18. https://doi.org/10.3389/fpsyg.2021.724848
Painter, K., & Mcbride, J. (2012). *Strength Gains : Block Versus Daily Undulating Periodization Weight Training Among Track and Field Athletes*. *7*, 161–169.
Pietzsch, F., & Wallis, J. (2020). Coaching children and youth: Building physical foundations. In *Sport Coaching with Diverse Populations* (pp. 24–37). Routledge.
Radcliffe, J. N., Comfort, P., & Fawcett, T. (2015). Psychological strategies included by strength and conditioning coaches in applied strength and conditioning. In *Journal of Strength and Conditioning Research* (Vol. 29, Issue 9). https://doi.org/10.1519/JSC.0000000000000919
Robinson, R. (2022). *Running Throughout Time: The Greatest Running Stories Ever Told*. Meyer & Meyer Sport.
Rønnestad, B. R., Hansen, J., Nygaard, H., & Lundby, C. (2020). Superior performance improvements in elite

cyclists following short-interval vs effort-matched long-interval training. *Scandinavian Journal of Medicine and Science in Sports*, *30*(5), 849–857. https://doi.org/10.1111/sms.13627

Rønnestad, B. R., & Mujika, I. (2014). Optimizing strength training for running and cycling endurance performance: A review. *Scandinavian Journal of Medicine and Science in Sports*, *24*(4), 603–612. https://doi.org/10.1111/sms.12104

Ropret, R., & Jevtić, B. (2019). Long-term athlete development: From theoretical and practical model to cognitive problem. *Fizicka Kultura*, *73*(2), 190–205. https://doi.org/10.5937/fizkul1902190r

Rosenblat, M. A., Lin, E., da Costa, B. R., & Thomas, S. G. (2021). Programming interval training to optimize time-trial performance: a systematic review and meta-analysis. *Sports Medicine*, *51*, 1687–1714.

Runners, R. (2022). *This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details. 54*, 1690–1701. https://doi.org/10.1249/MSS.0000000000002968

Ryan, K., & Dockray, S. (2019). *Understanding How eHealth Coaches Tailor Support For Weight Loss : Towards the Design of Person-Centered Coaching Systems*. https://doi.org/10.1145/3491102.3501864

Saw, A. E., Main, L. C., & Gastin, P. B. (2016). *Monitoring the athlete training response : subjective self-reported measures trump commonly used objective measures : a systematic review*. *May 2014*, 281–291. https://doi.org/10.1136/bjsports-2015-094758

Seiler, S. (2010). What is best practice for training intensity and duration distribution in endurance athletes? *International Journal of Sports Physiology and Performance*, *5*(3), 276–291. https://doi.org/10.1123/ijspp.5.3.276

Shipway, R. M. (2010). *ON THE RUN : PERSPECTIVES ON LONG DISTANCE RUNNING RICHARD MICHAEL SHIPWAY Bournemouth University*. *August*.

Smith, D. J. (2003). A Framework for Understanding the Training Process Leading to Elite Performance. *Sports Medicine*, *33*(15), 1103–1126. https://doi.org/10.2165/00007256-200333150-00003

Smolianov, P., Schoen, C., Norberg, J., Dion, S., Smith, J., & Calpino, K. (2018). Innovative Technology for High Performance and Mass Participation Sport. *The Use of Technology in Sport - Emerging Challenges*. https://doi.org/10.5772/intechopen.79415

Smyth, B. (2018). Fast starters and slow finishers: a large-scale data analysis of pacing at the beginning and end of the marathon for recreational runners. *Journal of Sports Analytics*, *4*(3), 229–242.

Soligard, T., Schwellnus, M., Alonso, J. M., Bahr, R., Clarsen, B., Dijkstra, H. P., Gabbett, T., Gleeson, M., Hägglund, M., Hutchinson, M. R., Janse Van Rensburg, C., Khan, K. M., Meeusen, R., Orchard, J. W., Pluim, B. M., Raftery, M., Budgett, R., & Engebretsen, L. (2016). How much is too much? (Part 1) International Olympic Committee consensus statement on load in sport and risk of injury. *British Journal of Sports Medicine*, *50*(17), 1030–1041. https://doi.org/10.1136/bjsports-2016-096581

Stöggl, T. L., & Sperlich, B. (2019). Editorial: Training intensity, volume and recovery distribution among elite and recreational endurance athletes. *Frontiers in Physiology*, *10*(MAY), 2–5. https://doi.org/10.3389/fphys.2019.00592

Stöggl, T., & Sperlich, B. (2014). *Polarized training has greater impact on key endurance variables than threshold , high intensity , or high volume training*. *cl*(February), 1–9. https://doi.org/10.3389/fphys.2014.00033

Sutton, J., & Austin, Z. (2015). *Qualitative Research : Data Collection , Analysis , and Management*. *68*(3), 226–231.

Till, K., Lloyd, R. S., McCormack, S., Williams, G., Baker, J., & Eisenmann, J. C. (2022). Optimising long-term athletic development: An investigation of practitioners' knowledge, adherence, practices and challenges. *PloS One*, *17*(1), e0262995.

Turton, R., Goodwin, H., & Meyer, C. (2017). Athletic identity, compulsive exercise and eating psychopathology in long-distance runners. *Eating Behaviors*, *26*, 129–132. https://doi.org/10.1016/j.eatbeh.2017.03.001

Varghese, M., Ruparell, S., & LaBella, C. (2022). Youth Athlete Development Models: A Narrative Review. *Sports Health*, *14*(1), 20–29. https://doi.org/10.1177/19417381211055396

Varghese, M., Ruparell, S., Labella, C., Scholar, G., & Services, H. (2022). *Youth Athlete Development Models : 02115*. https://doi.org/10.1177/19417381211055396

Wackerhage, H., & Schoenfeld, B. J. (2021). Personalized, evidence-informed training plans and exercise prescriptions for performance, fitness and health. *Sports Medicine*, *51*(9), 1805–1813.

Weldon, A., Duncan, M. J., Turner, A., Lockie, R. G., & Loturco, I. (2021). Practices of strength and conditioning coaches in professional sports: a systematic review. *Biology of Sport*, *39*(3), 715–726.
West, S. W., Clubb, J., Torres-Ronda, L., Howells, D., Leng, E., Vescovi, J. D., Carmody, S., Posthumus, M., Dalen-Lorentsen, T., & Windt, J. (2021). More than a Metric: How Training Load is Used in Elite Sport for Athlete Management. *International Journal of Sports Medicine*, *42*(4), 300–306. https://doi.org/10.1055/a-1268-8791
Woodford, L., & Bussey, L. (2021). Exploring the perceived impact of the COVID-19 pandemic social distancing measures on athlete wellbeing: a qualitative study utilising photo-elicitation. *Frontiers in Psychology*, *12*, 624023.
York, N. (n.d.). *JACK DANIELS, PhD*.
Zemková, E., & Hamar, D. (2018). Sport-specific assessment of the effectiveness of neuromuscular training in young athletes. *Frontiers in Physiology*, *9*, 313721.

# APPENDIX-A

**JIMMA UNIVERSITY**

**SPORT ACADEMY**

**DEPARTMENT OF SPORT SCIENCE**

**POSTGRADUATE PROGRAM**

**Questionnaire to be filled by Athletes, HPE teacher, sport expert and staff and manager of the club.**

Dear respondents the main objective of this questionnaire is to assess ***the long distance long term athlete development and training methodology at Woliso town*** athlete club for partial fulfillment of my MSc at Jimma University (JU). Therefore, your willingness, good cooperation, and genuine response are crucial to the success of this study. Hence, you are kindly requested to keep your response confidential. I would like to extend my cordial gratitude for your cooperation in filling out the questionnaire. The information's collection will not be used for any other purpose, and it will be confidential and not by any means an evaluation of the athlete's knowledge, so I humbly request that you give a true and precise response.

Thank you in advance for your cooperation!

**General directions:**

• Please, do not write your name on the questionnaire

Please mark a tick (√) inside the circle indicated.

• For the open ended questions, please write your responses in the space provided.

**Part I: Background Information**.

1. What is your age group: 1/ 13 -15 ☐ 2/ 1 6- 18 ☐ 3/19-20 ☐ 4/21-25 5/above 25

Sex: 1/ Male ☐ 2/ Female ☐

2. Educational level? (Tick one) 1/ 5- 8 ☐ 2/ 9-10 ☐ 3/ 11-12 ☐ 4/College ☐ 5/University ☐

3. How long have you been with the athletics club? (Tick one)

From 1/ 1-11 months ☐ 2/ 1-2 year ☐ 3/ 3 year ☐ 4/ 4-7 year ☐

5/ Others _____

4. Have you been in other sport project training before you join athletics club?

1/Yes ☐ 2/ No ☐

5. Is anyone from your family an athlete before?

1/ Yes ☐ 2/ No 3/ I don't remember anyone ☐

**Part 2: Main Body**

Training methodology related questions for (athletes, coaches, HPE teachers, experts and support staff) of woliso town.

| Part II | Items | Alternatives | | | | |
|---|---|---|---|---|---|---|
| 2 | Long-distance long-term athlete training methodology/Scientific Coaching/ methodology related questions | 1.Strongly | 2 Disagree | 3 Neutral | 4 Agree | 5.strongly |
| 2.1 | "Periodization training programs have been effective in improving long-distance athletes' development" | | | | | |
| 2.2 | "Progressive overload training methods have contributed to significant improvements." | | | | | |
| 2.3 | "Individualized training programs tailored to an athlete's specific needs in long-distance athletes." | | | | | |
| 2.4 | "Incorporating strength and conditioning exercises into training routines have positively impacted for long-distance athletes." | | | | | |
| 2.5 | "Adequate recovery and rest periods are crucial for long-term development in long-distance athletes." | | | | | |
| 2.6 | The training program is appropriate for the age level of the athlete | | | | | |
| 2.7 | The use of interval training enhances the performance in long-distance running. | | | | | |
| 2.8 | Incorporating strength training exercises into training program has positively impacted in long-distance running abilities. | | | | | |
| 2.9 | The coach consider the athlete benefits from multidisciplinary support include nutrition guidance, psychological support and injury prevention | | | | | |
| 2.10 | The coach consider the fundamental stage of athlete development. | | | | | |
| 2.11 | Following a high-volume training regimen has improved the endurance of long-distance races. | | | | | |
| 2.12 | The long term athlete development approach ensure the athlete ample time to develop their skill, endurance and mental resilience. | | | | | |
| 3 | For the effectiveness of athlete development training methodology exercise | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | related question | | | | | |
| 3.1 | High-intensity interval training (HIIT) | | | | | |
| 3.2 | Fartlek training | | | | | |
| 3.3 | Tempo runs | | | | | |
| 3.4 | Long slow distance (LSD) runs | | | | | |
| 3.5 | Hill training | | | | | |
| 4 | Warm-up and cool-down routines | | | | | |
| 4.1 | Dynamic stretching and static stretching. | | | | | |
| 4.2 | Foam rolling and self-myofascial release. | | | | | |
| 4.3 | Corrective exercises (e.g., addressing muscle imbalances, postural corrections). | | | | | |
| 5 | Factors that affect the long distance long term athlete development and training methodology. | | | | | |
| 5.1 | The club access training equipment's. | | | | | |
| 5.2 | The club has his own gymnasium center. | | | | | |
| 5.3 | The training supplies that the club give to you are comfortable to training. | | | | | |
| 5.4 | The coach uses gym to develop the long distance performance by using gym equipment for strength resistance and power. | | | | | |
| 5.5 | Balance between training load and recovery time. | | | | | |
| 5.6 | Contribution of individualization on athlete developments. | | | | | |
| 5.7 | Monitoring and feedback response. | | | | | |
| 6.8 | Coach collaboration with sport scientist and utilization experts | | | | | |
| 6 | Training methodology of coach | | | | | |
| 6.1 | Technical training is necessary in each training session | | | | | |
| 6.2 | The coach, analyze the progress of performance regularly. | | | | | |
| 6.3 | A coach apply most of the time athlete centered coaching methods in a training sessions. | | | | | |
| 6.4 | The coach analyze the progress of performance regularly. | | | | | |
| 6.5 | Coach has different plan to improve athlete performance and find the solution for current issue on long distance. | | | | | |
| 6.6 | Coaches uses method to sustain your performance when the competition day reaches. | | | | | |

Source: - *From the researcher review related literature by self-developed.*

# APPENDIX –B

**JIMMA UNIVERSITY**

**SPORT ACADEMY DEPARTMENT OF SPORT SCIENCE**

Dear interviewer (coaches of the club) the main objective of this interviews is to assess ***the long distance long term athlete development and training methodology at Woliso town*** athlete club for partial fulfillment of my MSc at Jimma University (JU). Therefore, your willingness, good cooperation, and genuine response are crucial to the success of this study. Hence, you are kindly requested to keep your response confidential. I would like to extend my cordial gratitude for your cooperation in filling out the questionnaire. The information's collection will not be used for any other purpose, and it will be confidential and not by any means an evaluation of the athlete's knowledge, so I humbly request that you give a true and precise response.

Part1:-Basic Data

1. Gender: - 2) Male 1**)** female
2. What is your level of educational qualification?

   1/ Ph.D., 2/ MSc, 3/ Diploma, 4/ B.A/BSc, 5/ $12^{th}$. OR other's?
3. What your Experience in years: he has 7 years' work experience.
4. How does the Woliso Town Athlete Club implement long-distance, long-term training methods for their athletes?
5. How does Woliso Town Athlete Club structure the training programs to ensure long-term development of their long-distance athletes?
6. What measures does Woliso Town Athlete Club take to monitor and track the progress of their long-distance athletes throughout their development?
7. How does Woliso Town Athlete Club support the overall growth and well-being of their long-distance athletes beyond just athletic development?
8. What external factors, such as environmental conditions or competition, pose challenges to the development of long-distance athletes at Woliso Town Athlete Club?
9. How does Woliso Town Athlete Club address the potential risk of overtraining or injuries that may impact the long-term development of their long-distance athletes?

# APPENDIX –C

## JIMMA UNIVERSITY

## SPORT ACADEMY DEPARTMENT OF SPORT SCIENCE

### Observational Check List for Investigating Facilities and equipment's of Athletics club

Observer: _____ Date: _____

Address: _____

Duration of Observation: _____Started: _____ Finished at: _____

**Observation checklist quantifiers: Excellent=5, Very good=4, Good=3, Faire=2, Not faire=1,**

| No | **Observation focus area** | 5 | 4 | 3 | 2 | 1 | Remark |
|---|---|---|---|---|---|---|---|
| 1 | **Planning** | | | | | | |
| | Plan/training program (Macro cycle plan, Mesocycle plan Microcycles plan). | | | | | | |
| | Developmental plan(endurance, strength, power, fitness) | | | | | | |
| | Training Session Plan and implementation | | | | | | |
| 2 | Facilities and equipment (barriers). | | | | | | |
| | running track | | | | | | |
| | Starting blocks | | | | | | |
| | Lanes | | | | | | |
| | Well-equipped gymnasium | | | | | | |
| 2.1 | Sport wear | | | | | | |
| | Coaches | | | | | | |
| | Assistance coach | | | | | | |
| | Athletes | | | | | | |
| 2.2 | athlete motivation | | | | | | |
| 2.3 | Coach athlete relation | | | | | | |
| 2.4 | Interests of an athlete to perform give activity | | | | | | |

# DABALATA-A

YUNIVARSIITII JIMMAA

AKKAADAAMII ISPOORTII KUTAA SAAYINSII ISPOORTII

SAGANTAA DIGRII 2FFAA TIIF

Gaaffii Atileetota, barsiisaa FJQ, ogeessa ispoortii fi hojjettootaa fi hogganaa kilabichaatiin Kan guutamuu qabu. Kabajamtoota deebii kennitan kaayyoon gaaffilee kanaa inni guddaan guddinaa fi mala leenjii atileetota yeroo dheeraa fageenya dheeraa kilabii atileetota magaalaa Wolisoo keessatti barnoota digrii 2ffaa (MSc) Yuunivarsiitii Jimmaa (JU) tti barachaa jiruuf qorannoo akka naaf ta'uuf madaaluu dha. Kanaaf, fedhiin keessan, tumsi gaariin, deebii dhugaa kennuu keessan milkaa'ina qorannoo kanaaf murteessaadha. Kanaaf, deebii kennitan iccitii akka eegdan kabajaan isin gaafadha. Odeeffannoon walitti qabame kaayyoo biraatiif Kan hin oolu, akkasumas iccitii Kan ta'u malee karaa kamiinuu madaallii beekumsa atileetichaa ykn deebii kennitootaa Kan madaaluuf Kan hin taane waan ta'eef, deebii dhugaa fi sirrii ta'e akka kennitan kabajaan isin gaafadha. Tumsa keessaniif dursinee galatoomaa!

- Kallattii waliigalaa:

Maqaa keessan gaaffilee irratti hin barreessinaa deebii keessan fuuldura filannoo kenname mallattoo (√) agarsiisaa.

Gaaffiiwwan banaa ta'aniif deebii keessan bakka kenname keessatti barreessaa.

- Kutaa I: Odeeffannoo deebii kennaa. 1. Umuriin kee meeqa : 1 / 13 -15 2/ 1 6- 18 3/19-20 4/21-25 5/ 25 ol

**Saala:** 1/ Dhiira 2/ Dubartii

2. Sadarkaa barnootaa? (Tokko irratti mallattoo kaa'i) 1 / 5- 8 2/ 9-10 3/ 11-12 4/Kolleejjii 5/Yuunivarsiitii

3. Kilabii atileetiksii waliin yeroo hammamii turte? (Tokko irratti mallattoo kaa'i) Ji'a 1/ 1-11 irraa 2/ 1-2 waggaa 3/ 3 waggaa 4/ 4-7 waggaa 5/ Kanneen biroo

4. Kilabii atileetiksii osoo hin seenin dura leenjii pirojektii ispoortii biroo keessa turtee? 1/Eeyyee 2/ Lakki

5. Maatii keessan keessaa namni kanaan dura atileeti ture jiraa? 1/ Eeyyee 2/ Lakki 3/ Nama hin yaadadhu.

Kutaa 2ffaa: Qaama Guddaa Gaaffilee mala leenjii walqabatan (atileetota, leenjistoota, barsiisota HPE, ogeeyyii fi hojjettoota deggersaa) magaalaa wolisoo.

| T/L | Gaaffilee qophaa'an | Wantoota Filannoo | | | | |
|---|---|---|---|---|---|---|
| 2 | Mala leenjii atileetota yeroo dheeraa fageenya dheeraa/Leenjisa Saayinsii/ mala waliin walqabatan gaaffilee | 1,Baayye' ee wali hingalu | 2,Walii hingalu | 3,Qaama bilisaa | 4,Waliingala | 5,Baayyeen waliigala |
| 2.1 | "Sagantaan leenjii yeroo yeroon kennamu guddina atileetota fageenya dheeraa fooyyessuu keessatti bu'a qabeessa ta'eera" | | | | | |
| 2.2 | "Maaloonni leenjii fe'iinsa garmalee tarkaanfataa ta'an fooyya'iinsa guddaa fiduuf gumaachaniiru." | | | | | |
| 2.3 | "Sagantaa leenjii dhuunfaa fedhii addaa atileeti tokkootiin qophaa'e atileetota fageenya dheeraa irratti hojiirra ooleera." | | | | | |
| 2.4 | "Shaakala humnaa fi haala mijeessuun hojii shaakala keessatti hammachuun atileetota fageenya dheeraa irratti faayidaa gaarii qaba." | | | | | |
| 2.5 | "Atileetota fageenya dheeraa irratti guddina yeroo dheeraaf yeroon damdamachuu fi boqonnaa gahaan murteessaadha." | | | | | |
| 2.6 | " Sagantaan leenjii sadarkaa umurii atileetichaa wajjin kan walsimu dha" | | | | | |
| 2.7 | "Fayyadamni leenjii gidduugaleessaa fiigicha fageenya dheeraa keessatti raawwii ni guddisa." | | | | | |
| 2.8 | Shaakala leenjii humnaa sagantaa leenjii keessatti hammachuun dandeettii fiigicha fageenya dheeraa irratti bu'aa gaarii qaba." | | | | | |
| 2.9 | "Leenjisaan faayidaan atileetiin deeggarsa ogummaa hedduu irraa argamu qajeelfama sooratаa, deeggarsa xiinsammuu fi ittisa miidhaa akka qabaatu taasisa. | | | | | |
| 2.10 | "Leenjisaan sadarkaa bu'uuraa guddina atileetotaa ilaala." | | | | | |
| 2.11 | "Sirna leenjii baay'ee hordofuun obsa fiigicha fageenya dheeraa fooyyessee jira." | | | | | |
| 2.12 | "Haalli guddina atileetotaa yeroo dheeraa atileetiin dandeettii, obsa fi dandeettii sammuu isaa akka guddifatu yeroo gahaa mirkaneessa." | | | | | |
| 3 | "Bu'a qabeessummaa mala leenjii guddina atileetotaa shaakala waliin walqabatee gaaffii qopaa'an." | | | | | |
| 3.1 | Leenjii gidduu cimina olaanaa (HIIT) . | | | | | |
| 3.2 | Leenjii Fartlek | | | | | |
| 3.3 | Fiigicha Teempiyoo | | | | | |
| 3.4 | Fiigicha fageenya dheeraa suuta jedhu (LSD). | | | | | |
| 3.5 | Leenjii tulluu | | | | | |
| 4 | Hojii ho'isuu fi qabbanaa'uu | | | | | |
| 4.1 | Diriirsuu daayinamikii fi diriirsuu istaatiksii. | | | | | |
| 4.2 | Foomii rolling fi ofumaan maayoofaashiyaal gadhiisuu. | | | | | |
| 4.3 | Shaakala sirreeffamaa (fkn, madaallii maashaalee dhabuu furuu, sirreeffama haala dhaabbii). | | | | | |
| 5 | Qabxiilee guddina atileeti yeroo dheeraa fi mala leenjii fageenya dheeraa irratti dhiibbaa geessisan. | | | | | |
| 5.1 | Kilabichi meeshaalee leenjii guutuu qaba. | | | | | |
| 5.2 | Kilabichi wiirtuu jiimnaaziyeemii mataa isaa qaba. | | | | | |
| 5.3 | Meeshaaleen leenjii kilabichi siif kennu leenjiidhaaf mijataa | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | dha. | | | | | |
| 5.4 | Leenjisaan meeshaalee jiimii humna ittisuu fi humnaaf fayyadamuun ga'umsa fageenya dheeraa guddisuuf jiim fayyadama. | | | | | |
| 5.5 | Madaallii fe'umsa leenjii fi yeroo fayyinaa gidduu jiru. | | | | | |
| 5.6 | Gumaacha dhuunfaan guddina atileetotaa irratti qabu. | | | | | |
| 5.7 | Hordoffii fi deebii yaada kennuu, deggaruu. | | | | | |
| 5.8 | Walta'iinsa leenjistootaa ogeessa ispoortii fi ogeeyyii itti fayyadama. | | | | | |
| 6 | Mala leenjii leenjisaa | | | | | |
| 6.1 | Tokkoon tokkoon leenjii keessatti leenjiin teeknikaa fayyadamuun barbaachisaadha | | | | | |
| 6.2 | Leenjisaan, adeemsa raawwii hojii yeroo yeroon xiinxala. | | | | | |
| 6.3 | Leenjisaan tokko yeroo baay'ee mala leenjii atileeti giddugaleessa godhate shaakala tokko keessatti hojiirra oolcha. | | | | | |
| 6.4 | Kooach adeemsa raawwii hojii yeroo yeroon xiinxalu. | | | | | |
| 6.5 | Leenjisaan ga'umsa atileetotaa fooyyessuu fi dhimma amma jiruuf furmaata fageenya dheeraa irratti argachuuf karoora adda addaa qaba. | | | | | |
| 6.6 | Leenjistoonni yeroo guyyaan dorgommii ga'u ga'umsa kee itti fufsiisuuf mala fayyadamu | | | | | |
| 6.7 | "Sagantaan leenjii yeroo yeroon kennamu guddina atileetota fageenya dheeraa fooyyessuu keessatti bu'a qabeessa ta'eera" | | | | | |
| 6.8 | "Maaloonni leenjii fe'iinsa garmalee tarkaanfataa ta'an fooyya'iinsa guddaa fiduuf gumaachaniiru." | | | | | |

# አባሪ-ሀ

**የጂማ ዩኒቨርሲቲ**

**የስፖርት አካዳሚ የስፖርት ሳይንስ ክፍል**

**ለ 2 ኛ ዲግሪ ፕሮግራም**

**መጠይቅ በአትሌቶች፣ የጤና እና የሰዉነት ማጎልመሻ አስተማሪ፣ በስፖርት ስፔሻሊስት እና በሰራተኞች እና በክለብ ስራ አስኪያጅ የሚሞላ።**

**ውድ ምላሽ ሰጪዎች የነዚህ ጥያቄዎች ዋና አላማ የረጅም ርቀት አትሌቶችን የረጅም ርቀት ስፖርተኞችን የማዳበር እና የስልጠና ዘዴን በወሊሶ ከተማ አትሌቶች ክለብ ለምርምር ዓላማ የሚሰራ ቢሆንም በጅማ ዩንቨርስቲ ኤም.ኤስ.ሲ. ስለዚህ፣ የእርስዎ ፍላጎት፣ ጥሩ ትብብር እና እውነተኛ መልሶች ለዚህ ዳሰሳ ስኬት ወሳኝ ናቸው። ስለዚህ የመልሶቻችሁን ሚስጥር እንድትጠብቁ በአክብሮት እጠይቃለሁ። የተሰበሰበው መረጃ ለሌላ ዓላማ አይውልም፣ እና በሚስጥር ይጠበቃል እናም በምንም መልኩ የአትሌቱን ወይም የተመልካቾችን የእውቀት መሰረት ለመገምገም የታሰበ አይደለም፣ ስለዚህ እውነተኛ እና ትክክለኛ መልሶችን እንድትሰጡ በትህትና እጠይቃለሁ። ስለ ትብብርዎ አስቀድመን እናመሰግናለን!**

**አጠቃላይ አቅጣጫዎች፡-**

**በጥያቄዎቹ ላይ ስምዎን አይጻፉ እና ለተሰጠው አማራጭ ከመልስዎ ፊት ለፊት ምልክት (√) ያመልክቱ።**

**ክፍት ለሆኑት ጥያቄዎች መልስዎን በተዘጋጀው ክፍት ቦታ ላይ ይፃፉ።**

**ክፍል አንድ፡ የተጠሪ መረጃ።** 1. **እድሜህ ስንት ነው፡** 1/13 -15 2/ 1 6- 18 3/19-20 4/21-25 5/ 25 **በላይ፡፡**

**ጾታ፡** 1/ **ወንድ** 2/ **ሴት** 2.

**የትምህርት ደረጃ? (ምልክት አንድ)** 1 / 5- 8 2/ 9-10 3/ 11-12 4/**ኮሌጅ** 5/ **ዩኒቨርሲቲ**

3. **ከአትሌቲክስ ክለብ ጋር ምን ያህል ጊዜ ኖረዋል? (አንድ ምልክት ያድርጉ)** 1 **ወር** / 1-11 **እስከ** 2/ 1-2 3 **ዓመታት** / 3 -4 **ዓመታት** / 4-7 5 **ዓመታት** / **ሌሎች**

4. **ወደ አትሌቲክስ ክለብ ከመቀላቀልዎ በፊት በሌሎች ስፖርቶች በፕሮጀክት ስልጠና ላይ ተሳትፈዋል?** 1/**አዎ** 2/ **አይ** 5. **በቤተሰባችሁ ውስጥ አትሌት የሆነ ሰው አለ?** 1/ **አዎ** 2/ **አይ** 3/ **ማንንም አላስታውስም።**

ክፍል 2፡ ዋና የሰውነት ጥያቄዎች በወሊሶ ከስልጠና ዘዴዎች (አትሌቶች፣ አሰልጣኞች፣ HPE መምህራን፣ ባለሙያዎች እና ድጋፍ ሰጪ ሰራተኞች) ጋር የተያያዙ፡፡

| T/L | መሰረታዊ ጥያቄዎች | ለምርጫ የቀረቡት | | | | |
|---|---|---|---|---|---|---|
| 2 | የረጅም ርቀት አትሌቶች የስልጠና ዘዴዎች / ሳይንሳዊ ስልጠና / ዘዴዎች ተዛማጅ ጥያቄዎች | 1, በጣም አልስማማም | 2, አልስማማም | 3, ነፃ አካል | 4, አወዳድር | 5,በጣም እስማማለሁ |
| 2.1 | "መደበኛ የሥልጠና መርሃ ግብሮች የረጅም ርቀት አትሌቶችን እድገት በማሻሻል ረገድ ውጤታማ ነበሩ" | | | | | |
| 2.2 | "እድገታዊ ከመጠን በላይ መጫን የስልጠና ዘዴዎች ጉልህ መሻሻሎች እንዲፈጠሩ አስተዋፅየ አድርገዋል." | | | | | |
| 2.3 | "ለአንድ አትሌት ልዩ ፍላጎት የተዘጋጁ ግለሰባዊ የሥልጠና መርሃ ግብሮች በረጅም ርቀት አትሌቶች ላይ ተተግብረዋል." | | | | | |
| 2.4 | "የጥንካሬ እና የማመቻቸት ልምምዶችን በስልጠና ሥራ ውስጥ ማካተት ለረጅም ርቀት አትሌቶች አወንታዊ ጥቅሞች አሉት." | | | | | |
| 2.5 | "ለረጅም ርቀት አትሌቶች በጊዜው ማገገም እና በቂ እረፍት ለረጅም ጊዜ እድገት ወሳኝ ናቸው." | | | | | |
| 2.6 | "የሥልጠና ፕሮግራሙ ለአትሌቱ የዕድሜ ደረጃ ተስማሚ ነው" | | | | | |
| 2.7 | "የጊዜ ልዩነት ስልጠናን መጠቀም በሩቅ ሩጫ አፈጻጸምን ያሳድጋል።" | | | | | |
| 2.8 | የጥንካሬ ማሰልጠኛ ልምምዶችን በስልጠና መርሃ ግብሩ ውስጥ ማካተት በረጅም ርቀት ሩጫ ላይ በጎ ተጽእኖ ይኖረዋል። | | | | | |
| 2.9 | "አሰልጣኙ አትሌቱ የሁለገብ ድጋፎችን በአመጋገብ መመሪያ፣ በስነ ልቦና ድጋፍ እና ጉዳትን በመከላከል ተጠቃሚ መሆኑን ያረጋግጣል። | | | | | |
| 2.10 | "አሰልጣኙ የአትሌቶችን እድገት የመነሻ ደረጃን | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | ይመለከታል." | | | | | |
| 2.11 | "ብዙ የስልጠና ስርዓትን ተከትሎ የሩቅ ሩጫ ጽናቱን አሻሽሏል." | | | | | |
| 2.12 | "የረጅም ጊዜ የአትሌቲክስ እድገት ሁኔታ አትሌቱ ጉልበታቸውን፣ ጽናታቸውን እና የአዕምሮ አቅማቸውን እንዲያዳብሩ በቂ ጊዜን ያረጋግጣል።" | | | | | |
| 3 | "የተዳበረ መጠይቅን ከመለማመድ ጋር በተያያዘ ለአትሌቶች እድገት የስልጠና ዘዴዎች ውጤታማነት።" | | | | | |
| 3.1 | ከፍተኛ የኃይለኛነት ክፍተት ስልጠና (HII. | | | | | |
| 3.2 | Fartlek ስልጠና፡፡ | | | | | |
| 3.3 | ቴምፖ ውድድር በቀስታ የረጅም ርቀት ሩጫ (ኤልኤስዲ)። | | | | | |
| 3.4 | ኮረብታ ላይ ስልጠና | | | | | |
| 4 | የማሞቅ እና የማቀዝቀዝ ስራዎች ተለዋዋጭ፡፡ | | | | | |
| 4.1 | የመለጠጥ እና የማይንቀሳቀስ ዝርጋታ። | | | | | |
| 4.2 | አረፋ የሚንከባለል እና ድንገተኛ myofascial መልቀቅ። | | | | | |
| 4.3 | የማስተካከያ መልመጃዎች (ለምሳሌ, የጡንቻን ሚዛን አለመመጣጠን, የድህረ-ገጽታ ማስተካከያዎች). | | | | | |
| 5 | የረጅም ጊዜ የአትሌቲክስ እድገትን እና የረጅም ርቀት ስልጠና ዘዴዎችን የሚነኩ ምክንያቶች. ክለቡ ሙሉ በሙሉ የማሰልጠኛ መሳሪያዎች አሉት። | | | | | |
| 5.1 | ክለቡ የራሱ የጂምናዚየም ማዕከል አለው። | | | | | |
| 5.2 | ክለቡ የሚሰጣችሁ የስልጠና መሳሪያ ለስልጠና ተስማሚ ነው። | | | | | |
| 5.3 | ወደ ውድድር ቀን ሲመጣ አፈጻጸምዎን ለማስቀጠል አሰልጣኞች ዘዴዎችን ይጠቀማሉ፡፡ | | | | | |

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| 5.4 | "መደበኛ የሥልጠና መርሃ ግብሮች የረጅም ርቀት አትሌቶችን እድገት በማሻሻል ረገድ ውጤታማ ነበሩ" | | | | | |
| 5.5 | "እድገታዊ ከመጠን በላይ መጫን የስልጠና ዘዴዎች ጉልህ መሻሻሎች እንዲፈጠሩ አስተዋፅየ አድርገዋል." | | | | | |
| 5.6 | የረጅም ርቀት አትሌቶች የስልጠና ዘዴዎች / ሳይንሳዊ ስልጠና / ዘዴዎች ተዛማጅ ጥያቄዎች 1, በጣም አልስማማም 2, አልስማማም 3, ነፃ አካል 4, አወዳድር | | | | | |
| 5.7 | "መደበኛ የሥልጠና መርሃ ግብሮች የረጅም ርቀት አትሌቶችን እድገት በማሻሻል ረገድ ውጤታማ ነበሩ" | | | | | |
| 5.8 | "እድገታዊ ከመጠን በላይ መጫን የስልጠና ዘዴዎች ጉልህ መሻሻሎች እንዲፈጠሩ አስተዋፅየ አድርገዋል." | | | | | |
| 6 | "ለአንድ አትሌት ልዩ ፍላጎት የተዘጋጁ ግለሰባዊ የሥልጠና መርሃ ግብሮች በረጅም ርቀት አትሌቶች ላይ ተተግብረዋል." | | | | | |
| 6.1 | "የጥንካሬ እና የማመቻቸት ልምምዶችን በስልጠና ሥራ ውስጥ ማካተት ለረጅም ርቀት አትሌቶች አወንታዊ ጥቅሞች አሉት." | | | | | |
| 6.2 | "ለረጅም ርቀት አትሌቶች በጊዜው ማገገም እና በቂ እረፍት ለረጅም ጊዜ እድገት ወሳኝ ናቸው." | | | | | |
| 6.3 | "የሥልጠና ፕሮግራሙ ለአትሌቱ የዕድሜ ደረጃ ተስማሚ ነው" | | | | | |
| 6.4 | "የጊዜ ልዩነት ስልጠናን መጠቀም በሩቅ ሩጫ አፈጻጸምን ያሳድጋል።" | | | | | |
| 6.5 | የጥንካሬ ማሰልጠኛ ልምምዶችን በስልጠና መርሃ ግብሩ ውስጥ ማካተት በረጅም ርቀት ሩጫ ላይ በጎ ተጽእኖ ይኖረዋል። | | | | | |
| 6.6 | "አሰልጣኙ አትሌቱ የሁለገብ ድጋፎችን በአመጋገብ መመሪያ፣ በስነ ልቦና ድጋፍ እና ጉዳትን በመከላከል ተጠቃሚ መሆኑን ያረጋግጣል። "አሰልጣኙ | | | | | |

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| | የአትሌቶችን እድገት የመነሻ ደረጃን ይመለከታል." | | | | | |
| 6.7 | "ብዙ የስልጠና ስርዓትን ተከትሎ የሩቅ ሩጫ ጽናቱን አሻሽሏል." | | | | | |
| 6.8 | "የረጅም ጊዜ የአትሌቲክስ እድገት ሁነታ አትሌቱ ጉልበታቸውን፣ ጽናታቸውን እና የአዕምሮ አቅማቸውን እንዲያዳብሩ በቂ ጊዜን ያረጋግጣል።" | | | | | |

## Letters from woliso town athlete club and woliso woreda sport office letter

Letters from woliso town sport and youth office which express the researcher comes to the woliso town athlete clubs to collected the data from athlete ,coaches, and stake holders and completed and letters from woliso woreda sport and youth office which indicates the data which the researcher collect data from 10 athletes respectively attached on the last page