

**ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND
MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE**

**Assessing the Match Between the Coach's Micro-Plan and Middle-Distance
Athletes' Subjective Load Responses: the Practices in Selected First Division
Athletics Clubs in Addis Ababa**

By

Zelalem Abera Berri

**A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial
Fulfillment of the Requirements for the Degree of Master of Science in Sport Science**

December, 2020

Addis Ababa, Ethiopia

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ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

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Acronyms and Abbreviations used

ACSM = The American College of Sports Medicine

GPS = Global Positioning System

HR = Heart Rate

IAAF = International Amateur Athletic Federation

RPE = Rating of Perceived Exertion

SRPE = Session Rating of Perceived Exertion

TM = Training Monotony

TMA = Time Motion Analysis

TRIMP = Training Impales

USSR = Union of Soviet Socialist Republic

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Abstract

This study aimed at identifying the relationships between coaches' micro-plan load distributions and athletes' subjective load response in week of middle-distance events in three Addis Ababa first divisions Athletics clubs. The study applied cross sectional study design as a general approach. From five first division athletics clubs three clubs were randomly selected with total sample of 30 participants in the study. Both qualitative and quantitative method have been utilized to analyze the collected data through questionnaire and interview. The subjective load responses of thirty middle-distance runners were measured for training volume and session rate of perceive exertion (RPE) (daily), training session and training monotony (weekly) for a single micro-plan and descriptive statistics (frequency, percentage, standard deviation, standard error and mean) also included to interpret the result. The match between coaches' predefined plan and athletes' load response were varied; therefore, performance of individual athletes was also varied within and between three club athletes. The findings of the study indicated that the predefined plan has a direct or indirect impact on middle distance athletes. The more experienced athletes show a better sRPE and result than the other.

Key Words: - Subjective response, training load, athlete's response, micro-plan load

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

Athletics is the natural pursuits of human beings. Some of the usual activities like walking, running, jumping and throwing are the movements, which we learnt first as small children. These activities developed through proper physical training and developed to elite athlete or professional athlete. Also, athletics activities divided in to track and field events. Running is a foot racing over a variety of distance among the most popular sport, ranges from sprints to marathon (Encyclopedia Britannica.) Middle-distance running is categorized under track events; It includes races from 800m to 3000m steeplechase. In order to improve the aforementioned qualities, continuous scientific training is also important to reach an athlete on its optimal performance.

Training is learning that provided in order to improve performance, people must be more effective after the training than they were before; so, to bring this change plan our work is essential.

Planning is essential to performance regardless of the level of competition. Long term planning should focus on global themes and training priorities based on competition performance, training, and testing data from previous years (Freeman, et.al 2014).

Training plan is very important to give direction to coaches and athletes what they do, to rechecks the plan how they can do and also to provides a background in which to evaluate performance aside from wins and losses or personal records (Freeman, et.al 2014). The way to controlled training process and meaningful planning of training was long history, starting with the first of attempts and errors, leading to scientific based planning which has started to develop during the 19th Century (Zahradník, et.al 2012). In athlete development process effective long and short-term planning is fundamental.

Professor L. Matveyev, the Theory of Physical Education at Moscow's Institute for Physical Education, construct a theory from practical year of experience that is known as Periodization of

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sport training. As a concept, the periodization process is an educated attempt to anticipate future performance based on an evaluation of previous competition, training results, and scientific knowledge about the body's adaptive response to stress. But most qualified expertise not interested in the theory (Yuri Verkhoshansky). "In 1952, the biggest news from Helsinki was that the Soviets were coming. After the Bolshevik Revolution of 1917, the USSR had not competed in the Olympics until the Helsinki Games" (SR/Olympic Sports) but although the soviet athletes achieved a good result in Olympic and international competitions. Gradually expertise not interested in the theories of periodization of training focused their attention into periodization training.

Periodization addresses the timing, sequence, and interaction of the training stimuli to maximize adaptive response in pursuit of specific competitive goals. It is achieved by planning and organizing training in a cyclic structure to develop all global motor qualities in a systematic, sequential, and progressive manner for optimal athlete development (Freeman, et. al 2014).

In General; the modern sport training concepts emerged in the 1952, Olympic game by Russian coach during Soviet athletes prepared for the Helsinki Olympic and other international competitions.

Periodization training and Training Plan are Synonymous. Training plan is the tool that guides training over a year or putting order for our training program, it is a major component of Periodization to divides the training year into distinct phases with very specific objectives (IAAF, Bompa, 2009). The aim of training plan is to reach an athlete to its optimal competitive performance at specific time points.

To reaching an athlete on its optimal performance monitoring training load is an essential part that the coach emphasis on its training program. This is providing information for coaches and athletes to maintain their training, consequently to understand individual responses to training, to assess fatigue and the associated need for recovery and illness. In general monitoring training load is important for two reasons: it may perform the training efficiently and it may prevent over training.

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There are two measurement tools which is very important indicators on athlete's response to the training load either difficult or not. These indicators are called internal and external load measurement tools measures an individual performance.

The concepts of internal and external training load were first presented at the Eighth Annual Congress of the European College of Sport Science in Salzburg, Austria in 2003 at an invited session and symposium organized by Tom Reilly (Franco M. Impellizzeri, 2018).

External load is one of the measurement tools that assesses about athletes training session (sets, repetitions, load, number of intervals, distance, time, length and number of recovery periods.) and external load also commonly used to quantify training in aerobic endurance sports and team sports (Bourdon, et. al 2017).

Internal load is a common measurement tool that assesses athletes' physiological responses to the training program. The rating of perceived exertion (RPE), Heart rate (HR), and lactate are means of assessing internal load. Internal training load is essential when external load may not provide an accurate description both about psychological and physiological load imposed on the athlete (Bourdon, et. al 2017). As most scholars explain internal load is provide an accurate description of the physiological and psychological stress on the athlete during training and competition (Guigan, 2017).

1.2 Statement of the Problem

Monitoring the load placed on athletes in both training and competition has become a very hot topic in sport science. Both scientists and coaches routinely monitor training loads using multidisciplinary approaches, and the pursuit of the best methodologies to capture and interpret data has produced an exponential increase in empirical and applied research. The coach plan is a training program that provides an athlete to its optimal performance in specific time period or a shared responsibility between the team member and the supervisor. Effective plan is participatory, measurable and achievable in each session and it has a clear objective and goal. Also, participatory plan is plan designed by involving all the respective body such as athletes, coach and team members. However, in Ethiopia most of the time in most sports activities the training plan is not participatory and the training program designed only by coach. Therefore,

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there were lots of problems associated with the coach plan and the athletes' response. The training program designed by the coach's only does not consider individual performance difference an athlete exerts and the daily performance of the athlete's, therefore such designed plan has either direct or indirect impact on athletes long runs result, this starts from the first day of training program.

In a direct impact difficulty of completing the daily session program, recovery period they need, i.e., the time need to recover from sets and sessions. Gradually this decreases an athlete's result that leads early dropout from the event. Similarly, the indirect impact decreases the country athletics result, and economy, the problem gradually developed from mild to chronic athletes' injury, this leads to an athlete early burnout and lifelong treatment injury. Therefore, plan and training program designed should be participatory. Having a participatory plan, the relation between the coach and the athletes will became very strong, so the communication between them is fundamental to plan training program that consider all individuals performance difference. This is what an effective coach's done and the science suggest to provide athletes to its optimal performance level at a specific time period and maintain from injury.

In another way the plan is not participatory the relationship between the coach and athlete is weak so the coach does not have detailed information about his/her individual athlete the training is over loading or reversible. In both situations the performance of the athlete is decline. These also decrease athlete result as well as the country result and may influence in the country economy. In similar manner participatory training plan is a paramount important in middle distance which is the major problem of the study area. As other training session in athletics, the training plan and training load distribution in the middle distance is the major challenges for the achievements athlete's maximum performance. Accordingly, predefined plan not gave the chance to incorporate individual trainees interest. In another side flexible training plan has the chance to seeing all round opportunities and input the filing of all stakeholders as well as the situations.

Monitoring athletes' training load is essential for determining whether they are adapting to their training program, understanding individual responses to training, assessing fatigue and the

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associated need for recovery, and minimizing the risk of nonfunctional overreaching, injury, and illness.

So, monitoring training load are a key to manage athlete training load and individualized the training program as of all trainee level of performance. To discover those problem the study used the measurement tools that quantified internal and external load responses.

Recently, different methods have been proposed for the monitoring of training loads in collective sports such as: heart rate monitoring; lactate blood concentration; monitoring of the distance traveled by GPS (global positioning satellite system) and accelerometers; rating of perceived exertion (Haas, 2013). However, some of the aforementioned training monitoring methods may not be practical to use in a daily training routine. In this sense for this study, the rating of perceived exertion (session-RPE proposed by Foster et al. 2001) which is simple and practical method to monitor the internal training load have been used.

This research was intended to evaluate the match between middle-distance coach's predefined micro-plan training load and athletes subjective load responses.

1.3.1 General Objective

The main objective of the study was to identify the match between coaches' micro-plan load and the middle-distance athletes' subjective load responses in three Addis Ababa City athletics clubs.

1.3.2 Specific Objectives

- To examine the micro-plan load distribution;
- To examine the load distribution of the micro-plan of the coach's plan and the athletes' subjective response;
- To identify the training monotony status of the athletes during the micro-plan (six day of the training session);

1.4 Research Questions

- Is there a match between the coach's plan and the athletes' subjective response?
- What seems the micro-plan load distribution in the selected clubs?
- What seems the athletes' training monotony status in micro-plan load distribution?

1.5 Significance of the study

From a practical perspective, the results of this study will significant implications for all distance running training and athletes load monitoring. Firstly, by determining which training load measure(s) best predicts fitness, endurance and change on them, this study provides evidence on the most effective methods of monitoring training load in middle distance athletes. Coaches and sports scientists may use these results to ensure that athletes are being appropriately monitored, with training load measures linked to performance improvement, and are reaching target training load thresholds. It may provide significant use for different groups, for coach to rearrange or update the training program each and every training after gating information from there athlete or trainee. For athlete provide self-assessment about training session given by his/her coach; simply and subjectively. Also, this study provides to open ways for the other researchers who are interested on the issues raised.

1.6 Delimitation of the Study

In order to make the study more specific and manageable, this study mainly focuses on assessments of the coach's micro-plan and the athlete's subjective load response in regard to training load monitoring. The study is delimited in scope in terms of study area; Addis Ababa; three first division athletics clubs in the city. These three clubs are Mekelakeya, Ethiopia Niged Bank and Federal Maremia Athletics sport club.

1.7 Limitation of the Study

The problems encountered during undertaking this thesis was: some of the athletes couldn't read the questionnaire and give response on time, because of this a lot of time has been spent during data collection from athlete's respondents. During the process of this study there was shortage of reference materials on internal training load monitoring of middle-distance events in Ethiopia.

Hence, the researcher believes that this problem contributed to the limitation of the study.

In fact, an attempt is made to overcome this limitation by making use of some unpublished but relevant materials. Lastly, as a self-sponsored scholar the researcher face shortage of time and money.

1.8 Definition of Operational Terms

Match: - a relation between coach's plan and athlete's response

Monotony: - Mean sRPE/Standard Deviation → Reflection of training variation across the week

Rate of perceived Exertion: - A scale used to measure athlete's subjective perception of the intensity of an exercise.

Session rating of perceived Exertion: - $RPE \times \text{Duration (min)}$ → Single session training load value

Strain: - Weekly sRPE*Monotony → Reflection of overall training stress from the week

Training: - any program of exercise designed to improve the skills and increase the energy capacities of an individual for particular activity.

1.9 Organization of the paper

The paper is organized into five chapters. The first chapter deals with introductory part consisting of introduction/background of the study, statement of the problem, research questions, objectives of the research, significance of the study, limitation and delimitation of the study, operational definition of some terms used in the study and organization of the study. The second chapter reviews literatures related to the study and informing the reader about what is already known in the area. In this chapter various theoretical concepts that relates with training load, coaches and athlete's relation, methods of training load monitoring and the general concept about athletics have been discussed.

The third chapter presents details of the study area description, research design, and population of the study, sample size determination, sampling technique, data source and collection method, procedure of data collection, questionnaire and the method of data presentation and analysis. Analysis of collected data and interpretation of the analyzed data are presented in the fourth chapter. Finally, chapter five presents a brief of the main findings; conclusions with regards to the knowledge derived from the research and recommendations the match between coach's micro-plan and athlete's subjective responses.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 Introduction

A literature review is a previous research work related with a topic you work. The literature review surveys scholarly articles, books, and published or unpublished research. The literature review acknowledges the work of previous researchers, and in so doing, assures the reader that your work has been well conceived. It is assumed that by mentioning a previous work in the field of study, that the author has read, evaluated, and assimilated that work into the work at hand.

2.2 Sport and Coaching

The United Nations (UN) described sport as a universal language that endows people with a focus for their energy, worthwhile goals and can teach the values of hard work, discipline and organization. In their perspective sport provides a forum for people to develop skills in leadership whilst assisting with the management of essential lessons in life such as victory and defeat (UN, 2005), The field of sport science has led to the development of specialized institutions throughout the world that use scientific methods to enhance sport performance (Stone et al., 2004).

According to (Pratt and Eitzen1985) Coaching is manner in which a sport team operates may be the consequence of the “coach’s leadership style, morale of subordinates, group cohesiveness, performance level, maturity of the members, and size of the group. The root meaning of ‘coach’ is to transform a person from where they are to where they want to be (Trikojus, 2003),

2.3 Athletics

Athletics is a natural sport per excellent constitutes, the most competitive physical training and allows the human beings to satisfy his basic primitive instincts for movement and subject to the discipline of the rule. It is a sport comprising Various Competitive athletic contests on the activities. Athletics is broadly divided in to two categories track and field events. (Johnken

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Doheraty 4th ed. 1985) Track events include-short distance, middle distance and long-distance event. Whereas the field events are jumping like high jump, triple, pole-vault jump, long jump and throwing events such as javelin, discus, shot-put and hammer. Athletics is one of Ethiopian's most popular sporting and becomes national identity.

The earliest form of athletics is organized bases, generally recognized as taking place during the years of classical antiquity notably in ancient Olympic Games.

2.4 Middle-Distance

Middle-distance running events are track even it includes;800m, 1500m and 3000msteeplechase in international competitions. The 800 m consists of two laps around a standard 400 m track, and has always been an Olympic event. The 1500m evet is a premier middle-distance race, covering three and three-quarter laps around a standard Olympic-sized track and the 3,000m steeplechase is an event requiring greater strength, stamina, and agility than the above events. This is because athletes are required to jump over five barriers per lap, after a flat first 200 m to allow for settling in. One barrier per lap is placed in front of a water pit, meaning that runners are also forced to deal with the chafing of wet shoes as they race. (Encyclopedia)

2.5 The Coach Plan

Planning is “thinking in advance what is to be done, when it is to be done, how it is to be done and by whom it should be done”. In simple words we can say, planning bridges the gap between where we are standing today and where we want to reach. In sport training plan is the process of arranging training program to trainees and recheck the training plan is valuable. Training plan was a long history, start with the first attempt and errors. These leading a scientific based planning (Zahradník, et.al 2012). Training plan is necessary to maximize physiological adaptations, which will improve performance (Bompa, 2017). Plan is a long-term process;(IAAF 2009, feerman, et.al 2014) to manage the long-term process and to achieve our goals objectively, periodization of athletes training program has important to dividing the long-term training plan in to smaller section based on the time extent, macro/annual, meso/weeks - month and micro/daily - weekly plan. This categorization may have macro cycle, meso cycle and micro cycle.

2.5.1 Categories of Plan

Macro cycle: is a one-year plan that directs the coaches and athletes for a year. This year may have a single competition period “mono cycle”, double competition period “bi-cycles” or triple competition period “tri-cycles”.

Meso cycle: is an intermediate time frame from two weeks to month this also single, double and triple competition period.

Micro cycle: as the name indicates micro cycle is short time frame from daily to weekly training program all sport and athletes have not the same objectives so the training plan that the coaches or athletes follow is different as their objectives (Whyte, 2006).

2.6. Monitoring Training Load

Sport training is a systematic physical activity that aims to provide morphological, metabolic and functional changes that increase performance (Carvalho et.al, 2018). The physical activities an individual performed represent as training load. Training load is a term used to describe the total effect of volume and intensity of training (Saunders, 2015); these training loads can be categorized in to internal and external training load based on the variable they represent.

The purpose of training is to improve performance outcomes and minimize or eliminate negative outcomes. Athletes train to improve their performance within the parameters of their disciplines. Training can be considered as the application of a dose response relationship where the dose represents the activity with a sufficient level of physiological/psychological stress to provoke a positive response of adaptation to that activity (Lambert & Borresen, 2010).

Monitoring training load is a proper distribution of load through the training program, relative to athlete's performance. This is important to determine whether the training is adaptable or not. to arrange the next training session and minimize risk. According to (Elloumi et al 2012), Quantifying training load in sport has allowed an athlete's training to be more closely monitored, and adjustments made to training prescription, thereby optimizing adaptation and minimizing undue fatigue.

When we talk about plan or Periodization our major concern is reaching athletes on its optimal performance at the specific time or period. To reach an athlete its optimal performance at the

specific time or period monitoring athletes' training load is essential. The goal of monitoring athletes' training load is to determine whether they are adapting to their training program, identify individuals' response to training, assess fatigue and minimize the risk of nonfunctional overreaching, injury, and illness (Guigan, Bourdon, et al, 2017). There are three key variables that influence performance outcomes: frequency of training, duration of training, and the intensity of training (Achten & Jeukendrup, 2003). In a system of training load monitoring, training load monitoring can be categorized into two major classes.

2.6.1 External Training Load

Athlete's physiological response and adaptation determined by the frequency, duration, and intensity of the training exposure. These variables often defined as external measure of training load. External load commonly used to quantify training in aerobic endurance sports and team sports (Bourdon, et. al 2017). External and internal training load quantification: - use training Intensity; training intensity can be calculated by dividing volume load by the number of repetitions, which represents the average load across the training session and volume load (total number of repetitions multiplied by the load). External training load mostly used in resistance training; to quantify external training load volume load and training intensity are used. Volume load is equals with the number of sets $\times$ number of repetitions $\times$ weight lifted or Volume load will be calculated by with the following equation, number of sets $\times$ number of repetitions $\times$ (% of 1-Repetition Maximum $\times$ 1-Repetition Maximum) where, the Training intensity is equals to volume load $\div$ total repetitions (Guigan, 2017).

Advancement and developments of technology proved many wearable devices which contribute and allowed for more systematic and detailed information about the athlete's external load; distance covered and speed (Guigan, 2017). External training load can be measured using accelerometers which record the frequency and magnitude of movement (Boyd, Ball, & Aughey, 2011) and global positioning systems to monitor distance and speed when outside (Lovell, Sirotic, Impellizzeri, & Coutts, 2013). To gain an understanding of external training load, a number of technologies are available to athletes and coaches. The most widely used external training load monitoring techniques were discussed below.

GPS and accelerometers

Different number of literatures reviewing the use of integrated micro-technology, predominantly addressing the use of GPS to quantify movement demands, assess differences between training and competition, and measure selected physiological and metabolic demands.

GPS and accelerometers are increasingly widespread because it allows practitioners to measure a wide range of metrics in athletes during both training and competition (Markwick, 2015, Guigan, 2017). A Number of companies produced devices with GPS technology; studies have different types of system, which can make comparisons difficult. Issues can also arise when athletes in a single squad use different GPS devices. External training load in team sports is routinely measured using GPS. GPS devices measure distance calculated by positional differentiation. Although velocity can be derived from distance, it is more commonly calculated via the Doppler-shift method as this result in greater precision and fewer errors, and acceleration is subsequently derived from velocity. To avoid between-device errors, athletes should consistently wear the same type of GPS device, as well as the same device from session to session. Research comparing different types of devices has found significant differences (Guigan, 2017).

Time Motion analysis

With sports analytics evolving rapidly through the development of micro-technology, a range of methods used to objectively assess human locomotion now exist. According to (Halsen, 2014 & Guigan, 2017) GPS and TMA is a popular way of monitor athletes tracking and movement analysis via digital video. In many professional sports environments range of methods and technologies is an integral part (Halsen, 2014; Guigan, 2017). When using TMA for monitoring, arbitrary speed thresholds are set. These categories may include walking, jogging, running, striding, sprinting, etc. It is becoming increasingly popular to associate TMA data with arbitrary and individualized speed thresholds. (Lovell and Abt 2011) compared TMA data from video analysis as arbitrary units with units expressed as individual speed thresholds (from pre-determined maximal treadmill running speeds). While this approach may be time-consuming, recent data suggest that individualized speed thresholds may provide practically significant information regarding training loads

Volume Load

Volume load is an excellent method of monitoring external load; the workload in the session, practitioners can calculate the volume load (total number of repetitions multiplied by the load) (Genner & Weston 2014, Guigan, 2017). Several approaches can be used to calculate the volume load: Volume load (lb or kg) = number of sets × number of repetitions × weight lifted (lb or kg)
Or

Volume load (kg) = number of sets × number of repetitions × (% of 1RM × 1RM)

Training Intensity

Another method to calculate volume load: dividing volume load by the number of repetitions, which represents the average load lifted across the training session (Guigan, 2017).

Training intensity = volume load kg or lb) ÷ total repetitions

2.6.2 Internal Training Load

Internal training load is a measurement tool that measure, athletes physiological and psychological stress imposed during physical work (Guigan, 2017). Heart rate (HR), rating of perceived exertion (RPE) and lactate are examples of measures of internal load (Guigan, 2017). As suggested by Hopkins (Hopkins WG, 1991) although external load can be accurate for the monitoring and prescription of training in predominantly linear movement planes or sports competed over strictly defined courses (track events); in sports where activity and opposition are undefined, speed and distance are potentially less accurate than internal measures.

Heart Rate

Heart rate (HR) monitoring is the most common method to measure internal load (Guigan, 2017, Markwick, 2015) at the squad level because of the availability of team-based HR monitoring systems which allow training load to be easily administered in a large group setting. There are many methods available for utilizing heart rate to evaluate internal training load. The first method of quantifying internal training load with HR was developed by (Banister TRIMP).

Banister's Training Impulse (TRIMP) weighs the duration using a weighting factor according to the following formula:

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Banister's TRIMP = $D * (\text{factor A} * \Delta\text{HR} * \exp(\text{factor B} * \Delta\text{HR}))$

Where - D = duration of training session in minutes

- For men: Factor A= 0.64 and Factor B= 1.92

- For women: Factor A = 0.86 and Factor B= 1.67

$\Delta\text{HR ratio} = (\text{HR}_{\text{ex}} - \text{HR}_{\text{rest}}) / (\text{HR}_{\text{max}} - \text{HR}_{\text{rest}})$

In which: - HR_{ex} is average heart rate of the exercise session,

- HR_{rest} is resting heart rate

- HR_{max} is maximal heart rate.

Rather than Banister's TRIMP methods number of other methods is available: -

Morton's TRIMP method; Morton's TRIMP= $D * \Delta\text{HR} * 2.718 \exp(\text{factor B} * \Delta\text{HR})$ lately modified method,

Edwards' TRIMP or the summated heart rate zones' score method; calculated as the product of the cumulated training duration (in minutes) for 5 heart rate zones multiplied by a coefficient relative to each zone (i.e., 50%-60% $\text{HR}_{\text{max}} = 1$

60%-70% $\text{HR}_{\text{max}} = 2$

70%-80% $\text{HR}_{\text{max}} = 3$

80%-90% $\text{HR}_{\text{max}} = 4$

90%-100% $\text{HR}_{\text{max}} = 5$

The Edwards' TL formula is as follow: Edwards' TL = duration in zone 1 * 1 + duration in zone 2 * 2 + duration in zone 3 * 3 + duration in zone 4 * 4 + duration in zone 5 * 5.

Luciatrump TRIMP Method; In this method, the duration spent in each of three heart rate zones (zone 1: below the ventilator threshold; zone 2: between the ventilator threshold and the respiratory compensation point and zone 3: above the respiratory compensation point) is multiplied by a coefficient (k) relative to each zone (k = 1 for zone 1, k = 2 for zone 2, and k = 3 for zone 3) and the adjusted scores are then summated.

The Lucia's TL formula is: Lucia's TRIMP= duration in zone 1 * 1 + duration in zone 2 * 2 + duration in zone 3 * 3.

Stango's TRIMP method; (Stagno, et al 2007) have developed a modified version of the Banister's TRIMP in an attempt to quantify training load based on the direct measurement of the athletes' lactate profile. The training load proposed by (Stagno et al 2007) was calculated through the following formula: Stango's TRIMP= $D * \Delta\text{HR} * 0.1225 * \exp(3.9434 * \Delta\text{HR})$

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Lactrump TRIMP method; as (Seiler & Kjerland, 2006) the training load is calculated through lactate (La) concentration. Three intensity zones were adopted (zone 1: $[La] \leq 2$, zone 2: $2 < [La] < 4$, zone3: $[La] \geq 4$). A relative coefficient was attributed to each zone ($k = 1$, for zone 1; $k = 2$, for zone 2; and $k = 3$, for zone 3). The LacTRIMP was calculated by the sum of the multiplications of the times spent in the different zones by the coefficient relative to each zone.

Rating of Perceived Exertion

The prescription of training variables such as volume, intensity, frequency and training load control should be applied, to produce positive physiological adaptations (Carvalho et.al, 2018). To control these variables the session rate of perceived exertion is a fundamental method. The American College of Sports Medicine (ACSM) consider sRPE as a method in which an exerciser self-assesses his or her perceptions and feelings of effort, fatigue, or discomfort while performing aerobic or resistance exercise. This self-assessment method first introduced by Australian Professor Gunnar Borg rated exertion scale that ranges from 6 to 20. A minimum score of 6 on the RPE scale represents bodily sensations during a state of rest whereas a maximum score of 20 reflects maximum exertion. The intensity of the exercise is higher, the level of discomfort also higher perceived, and the greater the amount of exertion required by the exerciser, thus influencing a greater score on the Borg scale. The perception of exertion of an individual is considered a function of the absolute exercise intensity or the metabolic rate required by the exercise (Rejeski, 1981). The ACSM and the American Heart Association recommend that a value of 5-6 on the CR-10RPE scale represents moderate intensity and a value of 7-8 represents vigorous intensity (Donath et al., 2013). According to (Foster, et al 2001) session RPE is a simplest method; cost and time effective, easily and quickly administered. Due to these factors the sRPE has a fundamental training load monitoring method in different sport (Markwick, 2015). Foster et al points out two important limitations to the TRIMP concept by Bannister i) information of HR regarding that training session might get lost if an athlete forgets to use HR monitor or HR monitor has a technical failure; and ii) HR is a poor method of evaluating very high-intensity exercise such as weight training, high-intensity interval training and plyometric training (Pind, Mäestu 2017). To reduce those factors, Foster et al developed a modification of the rating of the perceived exertion method.

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Table 1 Modification of Category Ratio Rating of Received Exertion Scale.

Rating	Descriptor
0	Rest
1	Very, Very Easy
2	Easy
3	Moderate
4	Somewhat Hard
5	Hard
6	-
7	Very Hard
8	-
9	-
10	Maximal

Source: Adopted from Foster, et.al 2001

Monotony and Strain:

Training monotony is about the variation, and a better way to look at variation is to consider the rest density of work and absolute loads. It is calculated by taking daily mean load and dividing it by the standard deviation of daily load.

Training strain: is the product of training monotony and weekly load. High in strain is the product of high training load and training monotony. This result leads athletes to overtraining and overreaching. Researchers suggest proportional increment of variables of monotony and strain determines individuals' adaptation.

2.7 The relation between coach and athlete

The term coach is often used to cover a wide range of activities, usually to help someone prepare for something. Coaching in athletics has been described as the organized provision of assistance to an individual athlete or group of athletes in order to help them develop and improve (Thompson, 1999).

In the distant past coaches were not as plentiful as now and many athletes were basically self-coached through necessity. Most of the "coaching": whenever and where ever athletes met, was in the form of wisdom passed down from the senior and master athletes in the group. Coaches

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are experts in identifying the physical characteristics needed for success in their field; however, there is a lack of skills necessary to assess the psychological factors proven to affect athletic performance. Coaches have relied on informal judgments of constructs, like an athlete's motivation and level of aggression to determine their potential to succeed.

When the coach and athlete in athletics have come together it has usually been through a chance meeting, frequently in a club environment. Together, the coach and athlete have built and developed a working relationship. This relationship has reflected that coaching is a complex social encounter with many roles and responsibilities for each coach.

Many athletes' performances have suffered due to a poor relationship with a coach or team member. Athletes who possess non-conformist or non-affiliation tendencies may tend to exhibit the greatest turmoil with autocratic or inflexible coaches. The coach is an important influence on anxiety in athletes (Baker *et al.*, 2000).

The same coaching strategies are not appropriate for each athlete; different athletes require different aspects from their coaches at different career points. This emphasizes the importance of coaches reading athletes' psychological needs and using different approaches at different times and in different situations.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This section presents the methodology that the researcher used to select sample, collect data and analyze the data in accordance with assessing the match between the coach's micro-plan and middle-distance athletes' subjective load response

3.2 Description of study area

Addis Ababa is the capital city of Ethiopia which embeds a number of athletics clubs in country as described on the title the study area focused on Addis Ababa city. Federal Maramiya, Mekelakeya and Ethiopia Niged Bank athletics clubs are based in Addis Ababa. Addis Ababa city has a subtropical highland climate (Köppen: Cwb). The city has a complex mix of highland climate zones, with temperature differences of up to 10 °C (18 °F), depending on elevation and prevailing wind patterns. The high elevation moderates' temperatures year-round and the city's position near the equator means that temperatures are very constant from month to month. As such the climate would be Mari-time if its elevation was not taken into account, as no month is above 22 °C (72 °F) in mean temperatures. The highest temperature on record was 32 °C (90 °F) 27 August 1996, while the lowest temperature on record was 0 °C (32 °F) on 23 November 1999. (Wikipedia)

3.3 Research Design

Research design constitutes the blue print for the collection, measurement and analysis of data. It helps the researcher in the allocation of limited resources by posing crucial choices. The characteristics of the research method and study variables used for this study was cross-sectional survey method. The main concern of this study is to identifying the athletes' response for the coach's training plan, to consider an individual athletes' performance and to avoid over training. It focuses on competitive athletes that have club and work regular training with their coach. In Cross-sectional survey methods was intended to be used to examine the subjective responses of the athletes' and the coach's plan in a specific time period. To collect adequate information of

the study was uses primary and secondary sources of data. So, the study include three First Division Athletics clubs found in Addis Ababa city. These clubs selected randomly, and all middle-distance athletes in the three clubs (male and Female) be recruited.

3.4 Population of the study

Population refers to the entire group of people, events, or objects of interest that a researcher wishes to investigate. It is a complete set of elements that possess some common characteristic defined by the sampling criteria established by the researcher. It forms the basis from which the sample or subjects will be drawn (Bryman & Bell 2011).

This research gives emphasis to the study area and participant accessibility, possibilities of getting data and affordability's of both time and cost. The study population focus on all five first division athletics clubs that register in Addis Ababa athletics federation; middle-distance event runners and their coach are participants in the study.

3.5 Sampling technique

It is known that taking a sample is required since collecting data through questionnaires from whole population is expensive and time taking. The sampling procedure the study was used simple random sampling to remove bias from the selection procedure and should result in representative samples. From all first division clubs select three using lottery method that register in Addis Ababa athletics federation; middle-distance event runners (male and female).

3.6 Method of Data collection

There are several methodological approaches available to gather data and for the proper achievement of the objectives of the study; the researcher used primary and secondary data sources. Primary data was collected using questionnaires and interview. Questionnaires, Document analysis and interview were administered and conducted with athletes and coaches of the sampled Athletics clubs. The advantages of using primary data is that, they are more reliable since they come from the original sources and are collected especially for the purpose of the study. Therefore, primary sources of data have been collected through in-depth interviews and questionnaires. Other sources of data which have been used in this study was secondary sources

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of data. Secondary data have been obtained from different documents from coach plan, published and unpublished works or materials, journals, books and articles.

Particularly the load distribution in the coach's micro plans were properly analyzed and compared with the subjective responses of the athletes.

3.7 Data Collection Instrument

The aim of the study was to investigate the match between coach's micro plan load and middle-distance athlete's subjective load response.

To assess the athletes' training load response the modified Borg Category-Ratio-10 Scale (CR-10) by (Foster, et. al 2001) was applied.

The internal load responses of the athletes were collected for a continuous of six day (Monday to Saturday) using a 10-scale categorical ratio session-RPE. Every day 30 minutes after the end of the training session athletes were asked to rate the level of difficulty of the daily training including warming -up and cooldown parts.

To check the relevance of the questionnaires, language appropriateness, clarities of instructions, orders of questions and steps to calculate training load quantification methods, give to professionals to comment, correspondingly the questionnaire translated into local language to concede the level of respondent. Finally distributes the questionnaires to pilot test. After distributes a pilot test give adequate time to fill the questionnaires and collect it according to their category and check questions may not complete.

Before the data were collected the respondents was involved in familiarization with the session rating of perceived exertion 10-point scale for six continual training sessions to internalize the session rating of perceived exertion scales. According to the given sRPE scale the respected athletes use self-evaluation of their training load after thirty minutes of the training sessions completed, about their subjective feelings of the overall load of the session's workout. After familiarization period, the coaches micro-plan of each clubs was collected according to planed period. According to these micro-plans, the sRPE 10-point scale were distributed to each respondent for continuous six days of training session. Here after, during the first week the

sRPE scale data of athletes in the first club named Federal Maremia were collected in the day-to-day session period after thirty minutes of training session directly from the training field. In similar manner, the second and third club which are, named as Mekelakeya and Ethiopia Niged bank athletes sRPE data were collated in the second and third weeks of the session period. Then the session load of every athletes of the sampled clubs were calculated by multiplying the RPE scale and the duration of the training session, including the warm-up and cool-down. Once the session load ($\text{RPE} \times \text{duration of the session}$) for the day's training session was calculated, the weekly load and the average daily load of the athletes were also calculated.

3.8 Method of data analysis

The raw data obtained from the participants was transformed into information for the purpose of decision making (Emery and Couper, 2003). According to (Walliman, 2011) data analysis is a process of gathering, modeling and transforming data with an aim of retrieving useful information, suggesting conclusions and supporting decision making. Before data is analyzed and presented it has to be organized. This involves putting the data into some systematic form (Jackson, 2009).

For this particular study, both descriptive and inferential statistics method were used. Descriptive statistics gave the researcher the chance to summarize large quantities of data using measures that can be understood by an observer. It consists of descriptive statistics such as frequencies, mean, level of significance, and standard deviation (Bryman & Bell 2011).

Data have been analyzed according to their collecting mechanism. Data collected through methods of questionnaire was first code and entered in to a computer system. The quantitative data is analyzed using descriptive statistical tools like frequencies, mean, standard deviation and percentage. The data obtained from open ended item will conclude and analyzed using narration and description method.

After data collection and coding, the data were analyzed using descriptive analysis technique which are presented in tables, graphs and charts.

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Responses of individual athletes' data collected using the 10-point scale, and the coaches' micro-plan across the three clubs recorded for one week or (six training days). Paired t-tests were used to compare the difference between predefined training load and the athletes' subjective load response. Statistical significance is set at $p \leq 0.05$. All statistical analysis was performed using statistical package for the social sciences (SPSS) software version 23 (Armonk, NY: IBM Corp) and Spread Sheet.

CHAPTER FOUR

4. RESULT AND DISCUSSIONS

4.1 Introduction

This chapter illustrates the result of the fieldwork and data analysis based on the stated objectives of the study. It is organized based on the research questions. The results are obtained from questionnaires administered to athletes and coaches, who are found to be in the three clubs of Addis Ababa city administration. It also deals with data analysis and discussions obtained from the respondents through questionnaire and document analysis. Descriptive analyses of participant in the three Athletic Clubs are summarized in Sex, competition event, training age, height (cm) and weight (kg) presented in table.

4.2 Respondent Rate

Respondent rate is the rate which describe the number of people who return the questionnaires distributed to the study relative to the number of samples. The study is conducted by distributing different questionnaires to totals of thirty (30) athletes of the sampled clubs out of which 100 percent have been filled in properly and no invalid filled data.

Table 2 respondent

Club Name	Distributed Questionnaires	Respondent rate (%)
Maremia	6	100
Mekelakeya	17	100
Niged Bank	7	100
Total	30	100

Source: Survey Result

4.3. Demographic Characteristics

As the activities of athletics is concerned for both female and male, no gender discrimination. This part of the questionnaire requested information related to demographic characteristics of respondents.

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Table 3 symbolizes the gender distribution of the respondents. Accordingly, about 70 percent of the respondents are males' athletes and the rest athletes are female 30 percent as shown in table 3 and figure 4. The survey results about the respondents' gender distribution in each sampled club were summarized as follow, 20 percent of males from Federal Maremia; 20 percent female and 36.67 percent male from Mekelakeya; and 10 percent female and 13.33 percent male from Ethiopia Niged Bank.

Table 3 Gender distribution

Club Name	Sex		Total
	Female	Male	
Maramia	0	6	6
Mekelakeya	6	11	17
Niged Bank	3	4	7
Total	9	21	30

Source: Survey Result

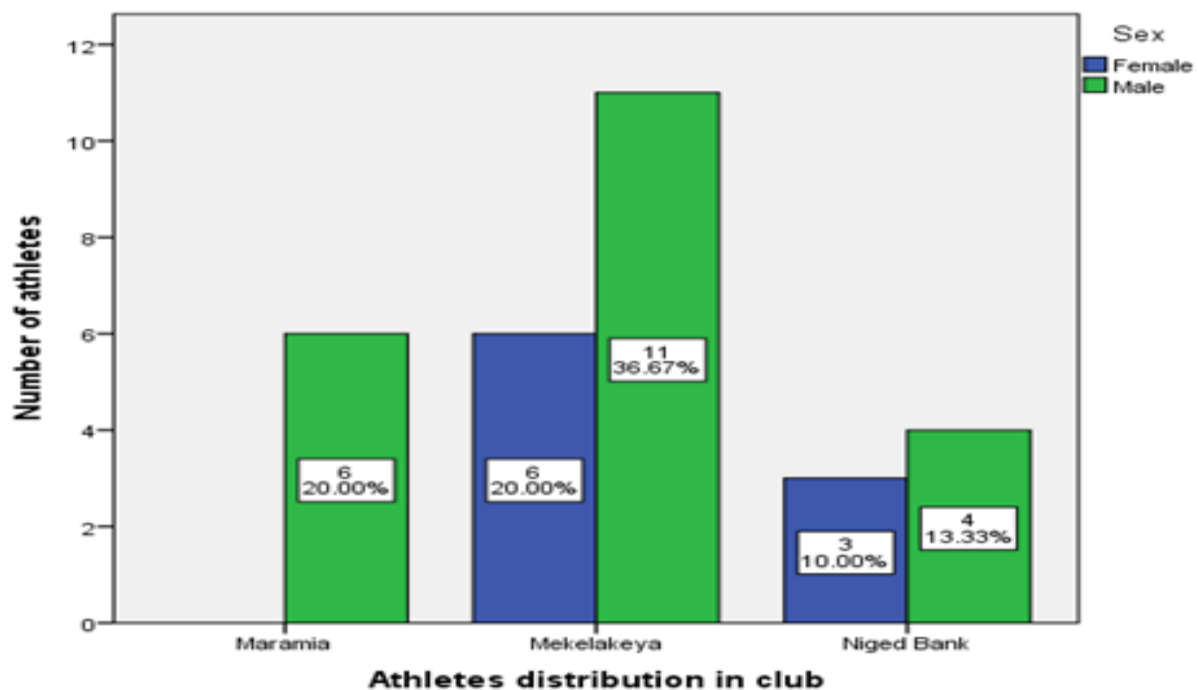


Figure 1. number of athletes distribute in three clubs

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4.4 Training age and Respondents event

Training age is a duration of an athlete stays in its particular event with coach; in this regard the table below describe the training age distributions in event. As described in the following table the duration/stay of athletes in their clubs with coaches, the maximum duration stay in year is 8 years and the minimum is 2 years. From the result ten percent of the athletes have a contact year of two years with the couch's, approximately seven percent of the athletes have training age of three years. In general, almost all athletes about eighty three percent in clubs have the duration of more than 4 years with couches.

Table 4 Training Age

Event		Training – Age							Total
		2	3	4	5	6	7	8	
800	Count	1	1	3	0	4	1	2	12
	%	33.3%	50.0%	42.9%	0.0%	57.1%	25.0%	50.0%	40.0%
1500	Count	2	1	1	1	2	2	2	11
	%	66.7%	50.0%	14.3%	33.3%	28.6%	50.0%	50.0%	36.7%
3000	Count	0	0	3	2	1	1	0	7
	%	0.0%	0.0%	42.9%	66.7%	14.3%	25.0%	0.0%	23.3%
Total	Count	3	2	7	3	7	4	4	30
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Survey Result

As the study focus on the middle-distance events, the following survey result describes the middle-distance events with in the study area of selected clubs. The table below states 13.33 percent of athletes participates in 800m, 6.67 percent in 1500m, and 20 percent in 800m, 16.67 percent in 1500m and 20 percent in 3000m and 6.67 percent in 800m, 13.33 percent in 1500m, 3.33 percent in 3000m is respectively take part from Federal Maremia, Mekelakeya, and Ethiopia Niged Bank.

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Table 5Event

Club_Name	Event			Total
	800	1500	3000	
Maremia	4	2	0	6
Mekelakeya	6	5	6	17
Niged Bank	2	4	1	7
Total	12	11	7	30

Source: survey data

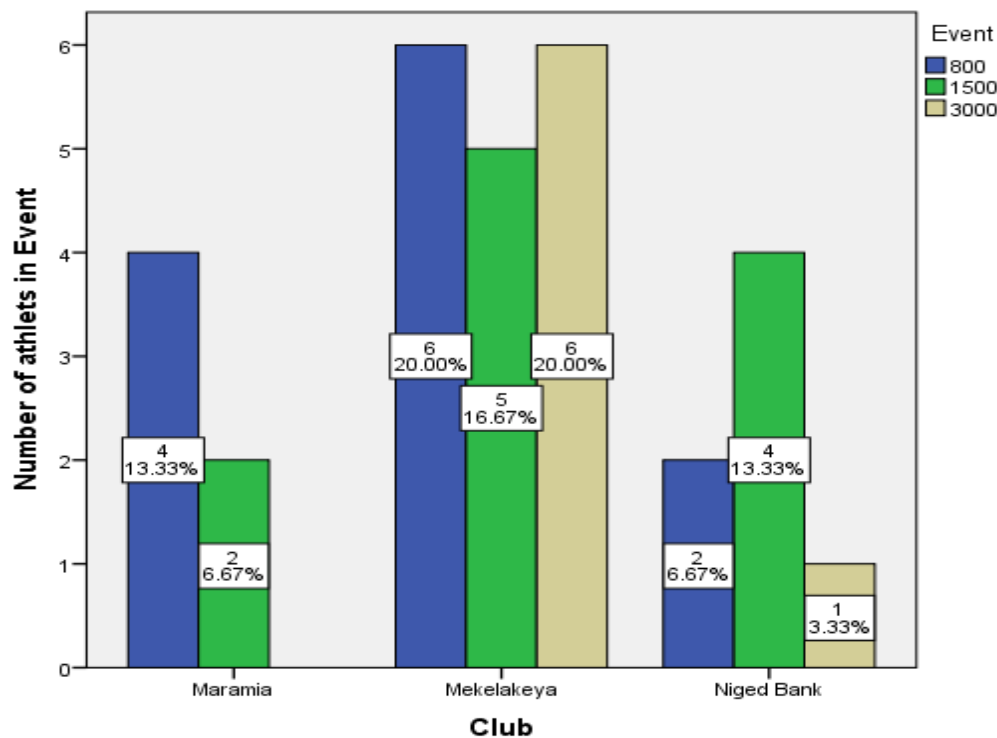


Figure 2. Athlete and events to participate

4.5 Quantification of training load

4.5.1 Coaches' Micro-Plan and Athletes Response

Coach's plan is a day-to-day training program; it has a clear objectives and goals. Ideally, the perceptions of training load should match between athlete and coach to have optimal adaptation, assuming that the plan coach had used scientifically and optimally planned. Monitoring the

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training process of distance runners is essential in order to observe their adaptations to training load and to avoid overtraining syndrome (Halsen, 2014).

As described in table 6 the coaches predefined plan training load in six consecutive day and athletes subjective training load responses categorized according to (Seiler & Kjerland, 2006). The predefined coaches plan load on these three clubs were averagely planned Light (less than or equal to Four). accordingly, 59 percent of athletes in Mekelakeya, 72 percent of athletes in Federal Maremina and 53 percent of athletes in Ethiopia Niged Bank were responded the six consecutive days of sessions training load were light. Similarly, 19 percent of respondents from Mekelakeya, 11 percent of respondents from Maremia, and 25 percent of respondents from Ethiopia Niged Bank were responded Moderate (greater than Four less than seven) and 22 percent of respondents from Mekelakya, 17 percent of respondents from Maremia, and 23 percent of respondents from Ethiopia Niged Bank responded High (greater than or equal to Seven).

Table 6. Coaches predefined plan and intensity zone

Club	Athletes' sRPE responses	Count (Frequency)	Coaches' Predefined Plan load
Mekelakeya	Light	58	4,5,4,5,3, and 7 Monday to Saturday respectively
	Moderate	19	
	High	22	
Federal Maremia	Light	26	3,4,4,3,3, and 7 Monday to Saturday respectively
	Moderate	4	
	High	6	
Ethiopia Nigd Bank	Light	21	3,4,4,3,4, and 7 & 5 Monday to Saturday respectively
	Moderate	10	
	High	9	
Average		35	4

Sources: survey data

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As described on intensity zone graph the distributions of athletes' subjective load responses to the predefined load using sRPE were no significant differences in intensity distribution among the three clubs.

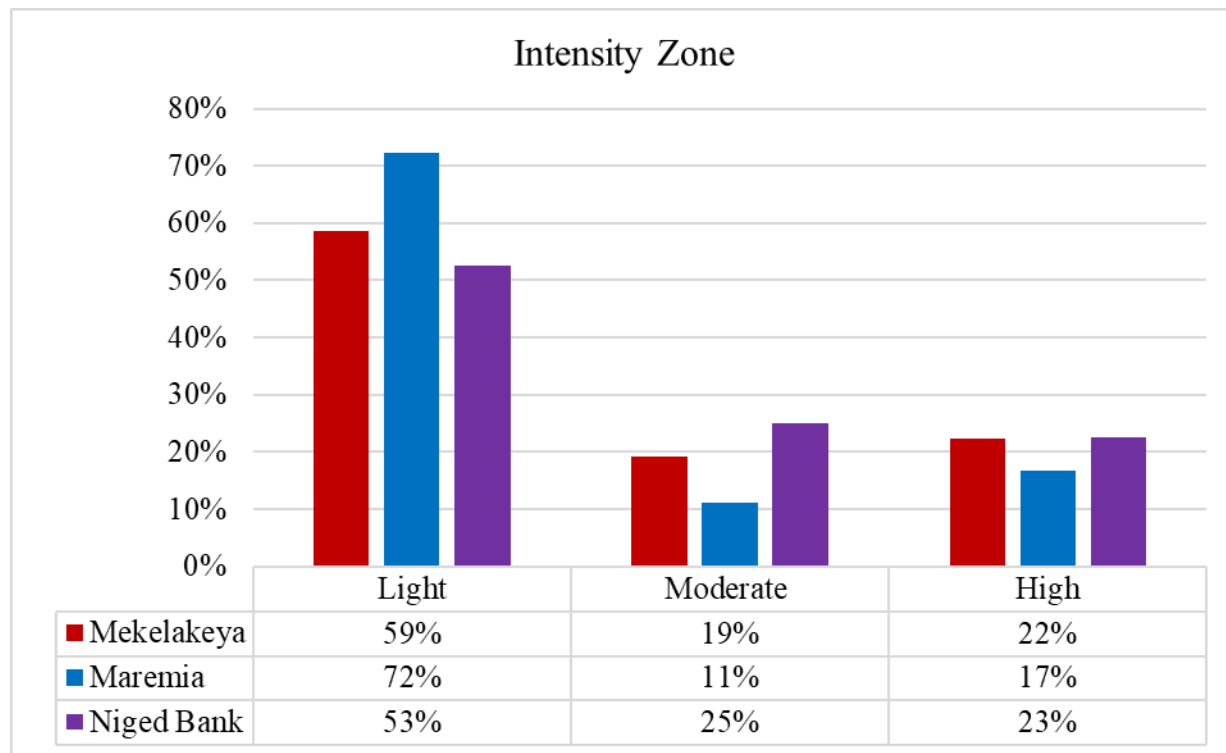


Figure 3. intensity zone

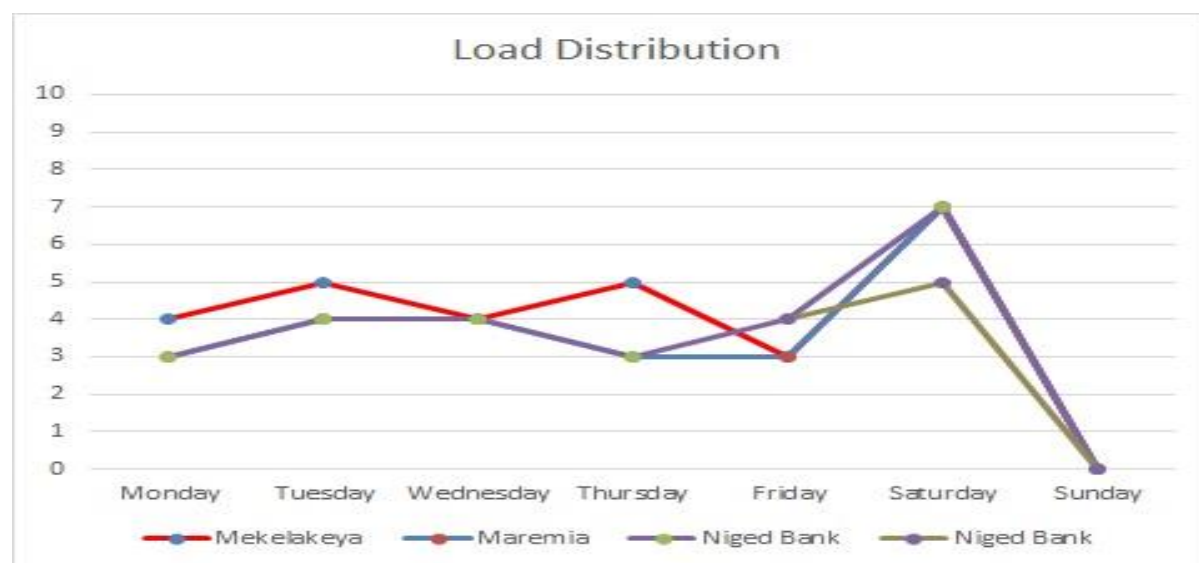


Figure 4. Coaches micro-plan load distribution in RPE

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In relation to the coaches' plan the responses of athletes summarized as follows. One of the most commonly used tools to measure athlete exertion, and ultimately load, is through the sRPE scale devised by Borg and modified by Foster. This involves athletes self-rating their physical exertion using a modified Borg scale by answering the question "How was your session today?" Typically, a 10- point scale is used, with the closer the score to 10 the harder the session. The sRPE score can then be multiplied by the session time to produce a training load score, measured in arbitrary units (AU).

In this study, monitoring of the training load began on the first day after familiarization with the method. These athletes were monitored during the weeks of training using the Session Rating of perceived exertion (session-RPE) method proposed by Foster et al. Accordingly, the sampled 30 athletes respond in relation to their rating of perceived exertion by pointing to a number and descriptor in the scale.

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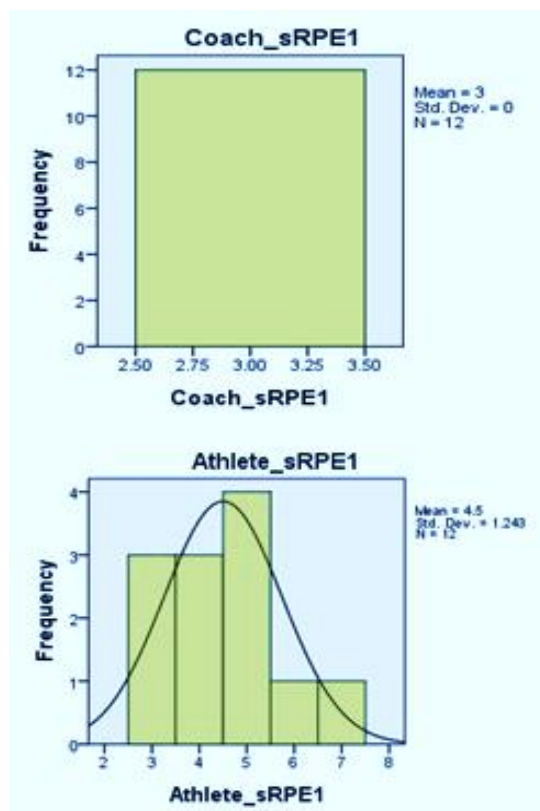
Day One

In figures and tables 4.5a to 4.5j the coach's micro-plan load distribution and the athlete's response are summarized. In this regard, in first day training program the coaches give a session load 3 and 4 for 12 and 17 athletes respectively. Accordingly, in the first day of coach's training load plans, only three athletes who is about 25 percent of the respondent's response that there were match between the training load given by the coach with their performance. Besides, there were 75 percent of load variation between the coach and the athlete's perceptions. From the survey result shown in the table 4.5a the percentage of the athlete's response in regarding to the load scale of 3 are, 25, 33, 8.3 and 8.3 percent of respondents respond the Borg scale of 4,5,6 and 7 respectively in relative to scale given by coaches. Similarly, in the first day of coach training load 4, four athletes respond 4 which is about 23.5 percent of the respondent's response that there were match with the load given by the coach. Accordingly, the survey result table 4.5b display 76.5 percent of athletes differently respond than the load; 47.1, 11.8, 11.8 and 5.9 percent of respondents respond 3, 5, 7 and 10 respectively.

Coach_sRPE1				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	12	100.0	100.0	100.0

Table 4.5a

Athlete_sRPE1				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	3	25.0	25.0	25.0
4	3	25.0	25.0	50.0
5	4	33.3	33.3	83.3
6	1	8.3	8.3	91.7
7	1	8.3	8.3	100.0
Total	12	100.0	100.0	

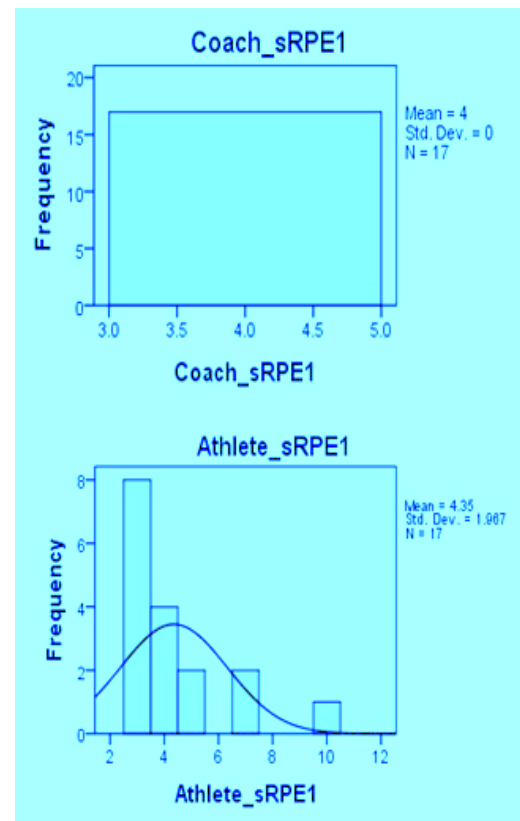


ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

Coach_sRPE1				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 4	17	100.0	100.0	100.0

Athlete_sRPE1				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	8	47.1	47.1	47.1
4	4	23.5	23.5	70.6
5	2	11.8	11.8	82.4
7	2	11.8	11.8	94.1
10	1	5.9	5.9	100.0
Total	17	100.0	100.0	

Table 4.5b



Day Two

In second day, training program the coach's micro-plan load distribution and the athlete's response are summarized as the table and figure below, the coaches give a session load 4 for 12 athletes and 5 for 17 athletes. Accordingly, in the second day of coach's training load plan only three athletes which is about 25 percent of the respondent's response that there were match between the training load given by the coach with their performance. Besides, there were 75 percent (26) of load variation between the coach and the athlete's perceptions. From the survey result shown in the table 4.5c the percentage of the response in regarding to the load scale of 4 are, 8.3 and 66.7 percent of respondents respond the Borg scale of 2, and 3 respectively in relative to scale given by coaches. Similarly, in the second day of coach load 5 also four athletes respond 5 which is about (23.5) percent of the respondent's response that there were match with the load given by the coach. Accordingly, the survey result table 4.5d display (64.7) percent of

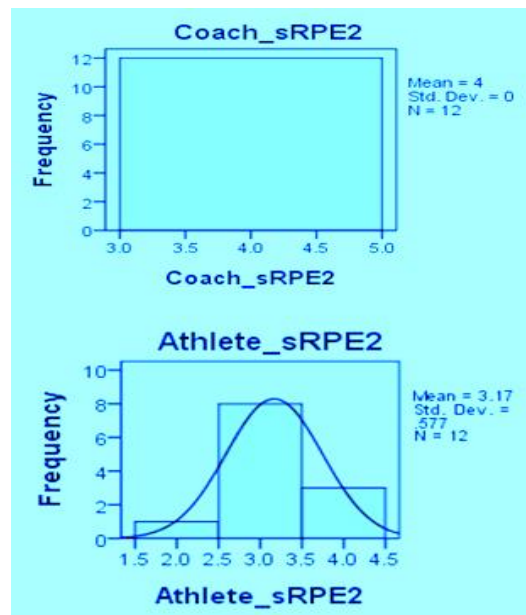
ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PPLAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

athletes differently respond than the load; 11.8, 35.3, 5.9, and 11.8 percent of respondents respond 3, 4, 6 and 7 respectively; but 2 (11.8) percent of the athletes is missed the training.

Coach_sRPE2				
	Freq	Percent	V. Per	Cum. Per
Valid 4	12	100.0	100.0	100.0

Athlete_sRPE2				
	Freq	Percent	V. Per	Cum. Per
Valid 2	1	8.3	8.3	8.3
3	8	66.7	66.7	75.0
4	3	25.0	25.0	100.0
Total	12	100.0	100.0	

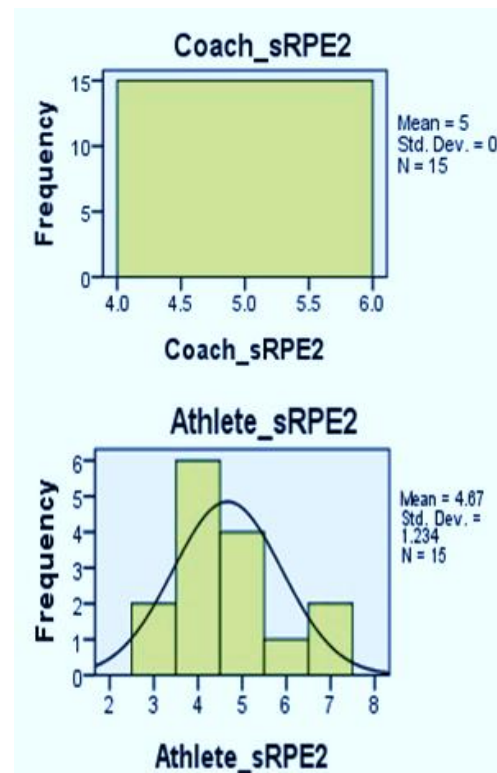
Table 4.5c



Coach_sRPE2				
	Freq	Percent	V. Per	Cum. Per
Valid 5	15	88.2	100.0	100.0
Missing System	2	11.8		
Total	17	100.0		

Athlete_sRPE2				
	Freq	Percent	V. Per	Cum. Per
Valid 3	2	11.8	13.3	13.3
4	6	35.3	40.0	53.3
5	4	23.5	26.7	80.0
6	1	5.9	6.7	86.7
7	2	11.8	13.3	100.0
Total	15	88.2	100.0	
Missing System	2	11.8		
Total	17	100.0		

Table 4.5d



ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

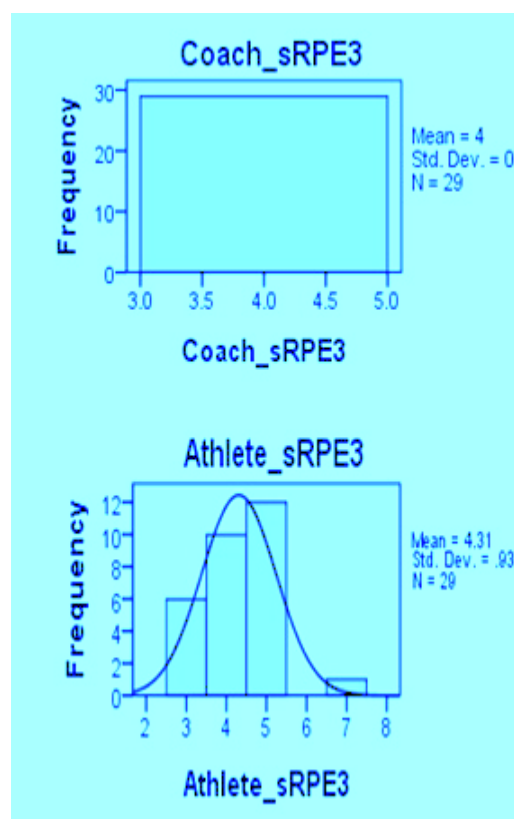
Day Three

In third day, training program the coach's micro-plan load distribution and the athlete's response are summarized as the table and figure below, the coaches give a session load Four for Twenty-nine athletes. Accordingly, in the third day of coach's training load plan only (10) athletes which is about 34.5 percent of the respondent's response that there were match between the training load given by the coach with their performance. Besides, there were 65.5 percent (19) of load variation between the coach and the athlete's perceptions. From the survey result shown in the table 4.5e the percentage of the response in regarding to the load scale of 4 are, 20.7,41.4and 3.4percent of respondents respond the Borg scale of 3, 5 and 7 respectively in relative to scale given by coaches.

Coach_sRPE3				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 4	29	100.0	100.0	100.0

Athlete_sRPE3				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	6	20.7	20.7	20.7
4	10	34.5	34.5	55.2
5	12	41.4	41.4	96.6
7	1	3.4	3.4	100.0
Total	29	100.0	100.0	

Table 4.5e



ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

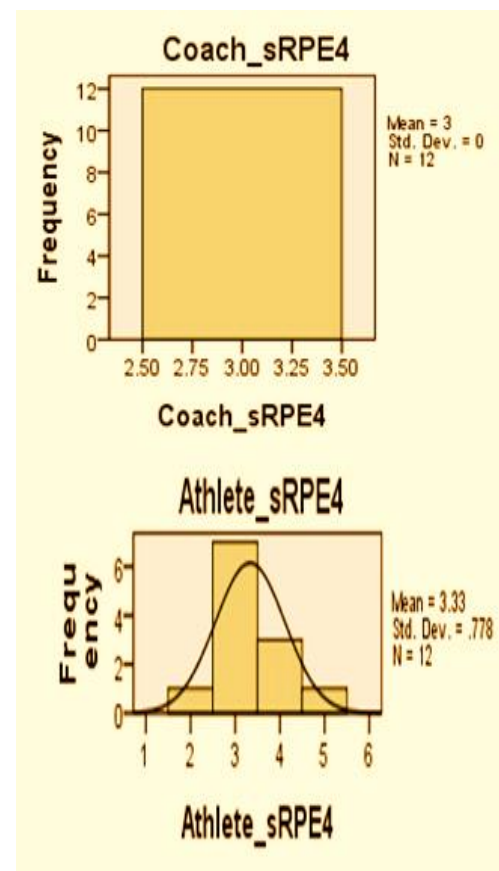
Day Four

In fourth day, training program the coach's micro-plan load distribution and the athlete's response are summarized as the table and figure below, the coaches give a session load 3 for 12 athletes and session load 5 to 17 athletes. Accordingly, in the third day of coach's training load plan only (7) athletes which is about 58.3 percent of the respondent's response that there were match between the training load given by the coach with their performance. Besides, there were 41.7 percent (5) of load variation between the coach and the athlete's perceptions. From the survey result shown in the table 4.5f the percentage of the response in regarding to the load scale of 3 are, 8.3, 25 and 8.3 percent of respondents respond the Borg scale of 2, 4 and 5 respectively and to coach session load 5 five athletes (29.4) percent match with the coach load. Other athletes respond 58.8 and 11.8 percent of respondent respond 3 and 4 in relative to scale given by coaches.

Coach_sRPE4				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	12	100.0	100.0	100.0

Athlete_sRPE4				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 2	1	8.3	8.3	8.3
3	7	58.3	58.3	66.7
4	3	25.0	25.0	91.7
5	1	8.3	8.3	100.0
Total	12	100.0	100.0	

Table 4.5f

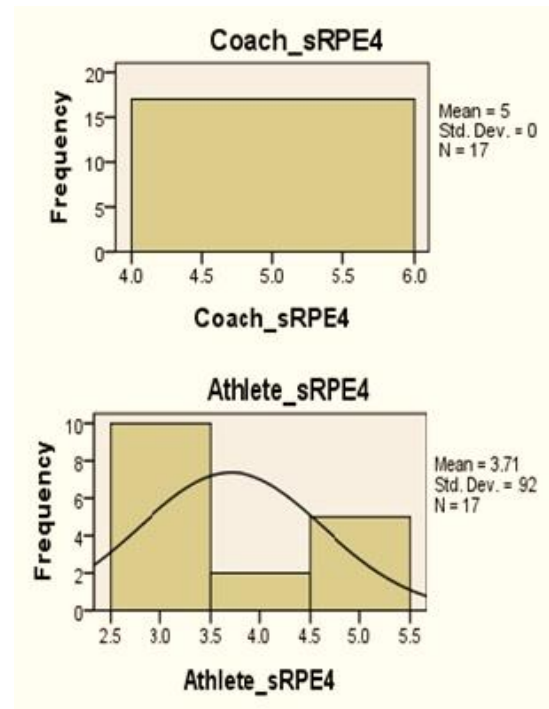


ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

Coach_sRPE4				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 5	17	100.0	100.0	100.0

Athlete_sRPE4				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	10	58.8	58.8	58.8
4	2	11.8	11.8	70.6
5	5	29.4	29.4	100.0
Total	17	100.0	100.0	

Table 4.5g



Day Five

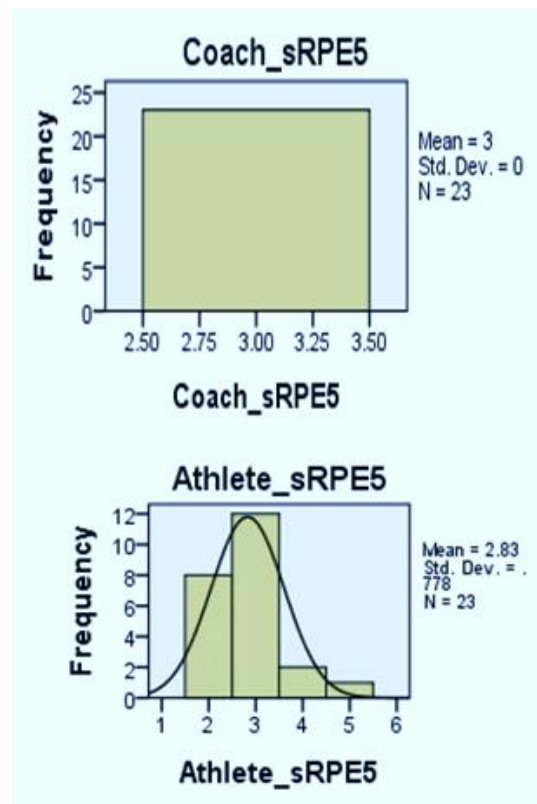
In tables (4.5h to 4.5i) and figures bellow the coach's micro-plan load distribution and the athlete's response are summarized. In this regard, in fifth day training program the coaches give a session load 3 for 23 athletes and 4 for 7 athletes. Accordingly, in the fifth day of coach's training load plan only 12 athletes which is about 52.2 percent of the respondent's response that there were match between the training load given by the coach with their performance. Besides, there were 47.8 percent (11) of load variation between the coach and the athlete's perceptions. From the survey result shown in the table 4.5h the percentage of the response in regarding to the load scale of 3 are, 34.8, 8.7 and 4.3 percent of respondents respond the Borg scale of 2,4, and 5 respectively in relative to scale given by coaches. Similarly, in the first day of coach load 4 also three athletes respond 4 which is about (42.9) percent of the respondent's response that there were match with the load given by the coach. Accordingly, the survey result table 4.5i display (57.1) percent of athletes differently respond than the load; 42.9 and 14.2 percent of respondents respond 3 and 7 respectively.

ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

Coach_sRPE5				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	23	100.0	100.0	100.0

Athlete_sRPE5				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 2	8	34.8	34.8	34.8
3	12	52.2	52.2	87.0
4	2	8.7	8.7	95.7
5	1	4.3	4.3	100.0
Total	23	100.0	100.0	

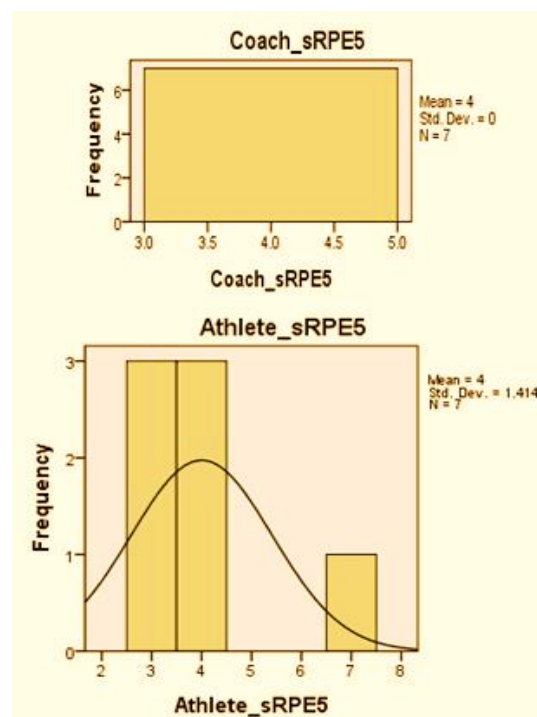
Table 4.5h



Coach_sRPE5				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 4	7	100.0	100.0	100.0

Athlete_sRPE5				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 3	3	42.9	42.9	42.9
4	3	42.9	42.9	85.7
7	1	14.3	14.3	100.0
Total	7	100.0	100.0	

Table 4.5i



ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

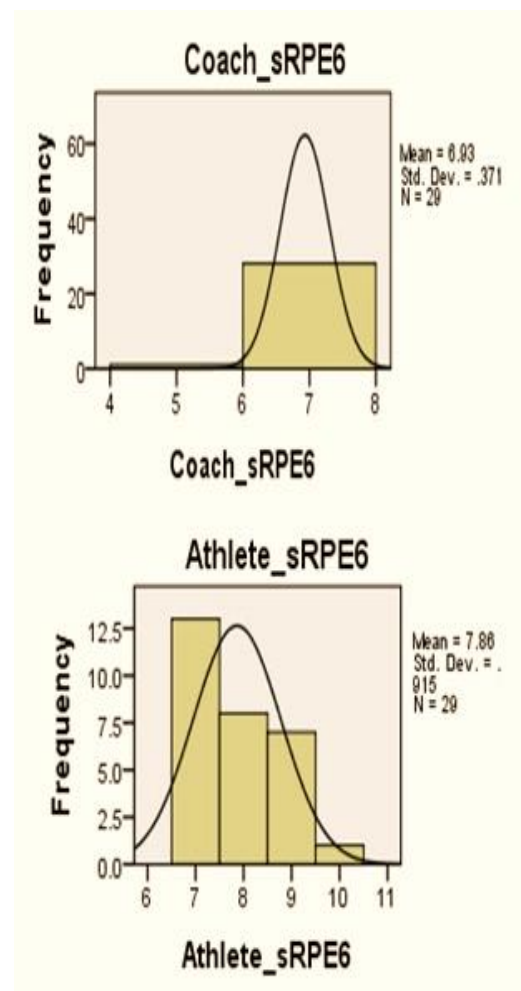
Six Day

In sixth day, training program the coach's micro-plan load distribution and the athlete's response are summarized as the table and figure below, the coaches give a session load 5 for 1 athlete and 7 for 28 athletes. Accordingly, in the sixth day of coach's training load plan only thirteen athletes which is about 43.3 percent of the respondent's response that there were match between the training load given by the coach with their performance. Besides, there were 66.7 percent (16) of load variation between the coach and the athlete's perceptions. From the survey result shown in the table 4.5j the percentage of the response in regarding to the load scale of 7 are, 26.7, 23.3 and 3.3 percent of respondents respond the Borg scale of 8, 9 and 10 respectively and one athlete is missed the training.

Coach_sRPE6				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 5	1	3.3	3.4	3.4
7	28	93.3	96.6	100.0
Total	29	96.7	100.0	
Missing System	1	3.3		
Total	30	100.0		

Athlete_sRPE6				
	Freq	Percent	Valid Percent	Cumulative Percent
Valid 7	13	43.3	44.8	44.8
8	8	26.7	27.6	72.4
9	7	23.3	24.1	96.6
10	1	3.3	3.4	100.0
Total	29	96.7	100.0	
Missing System	1	3.3		
Total	30	100.0		

Table 4.5j



ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

4.5.2 Training Monotony Differences

The figure below discusses about coaches' load distribution over a week training plan and the responses of trainees to coaches load in training monotony. To calculate training monotony first calculate session load.

1. $SL = \text{session time} * \text{session RPE} (60 * 5) = 300 \text{ AU}$
2. $\text{Weekly load} = SL1 + SL2 + \dots + n$
3. $\text{Average daily load total} = WL / \text{number of sessions} (n + n + \dots / \text{number of } n)$
4. $\text{Daily average standard deviation} = \text{square of sum of all data point subtracts mean over } (n-1)$
5. $\text{Training Monotony} = \text{Average daily load total} / \text{daily average standard deviation}$ (Anthony et.al, 2015)

As figure 5 shows the highest monotony of athletes registered 1.88 and the lowest monotony also registered 1.24

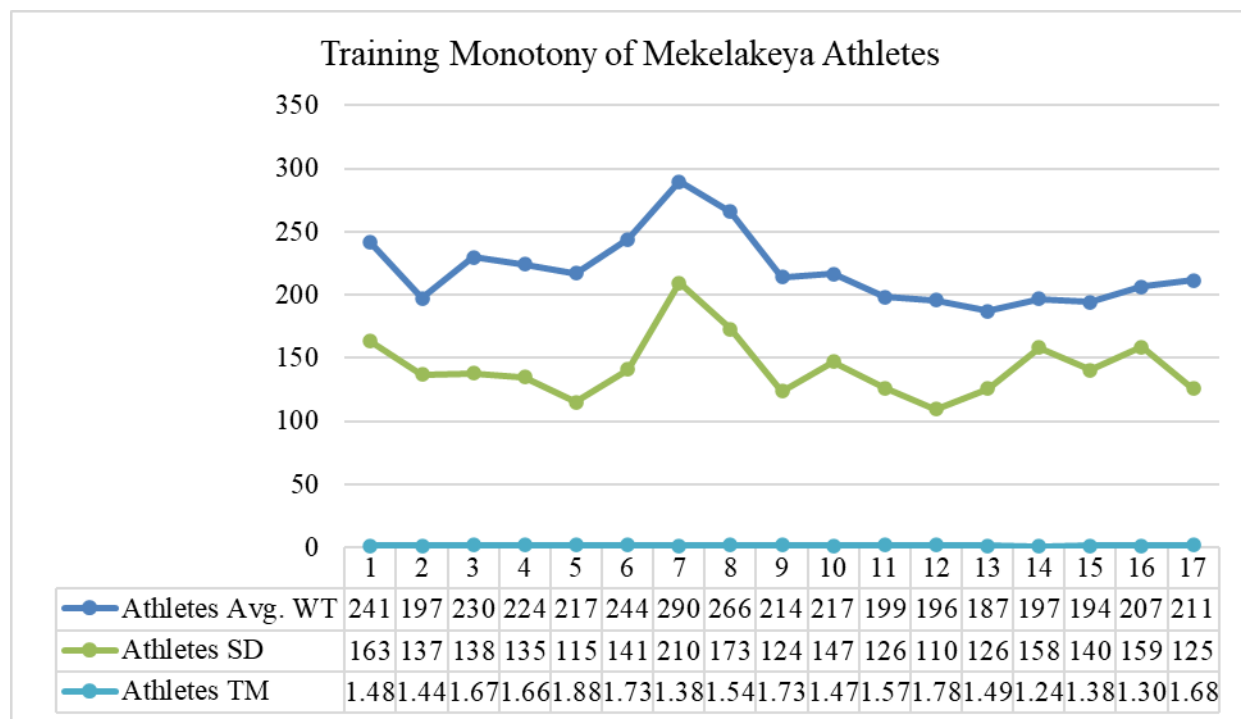


Figure 5 Mekelakeya athletes training monotony

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As figure 6 shows the highest monotony of athletes registered 1.54 and the lowest monotony also registered 1.15

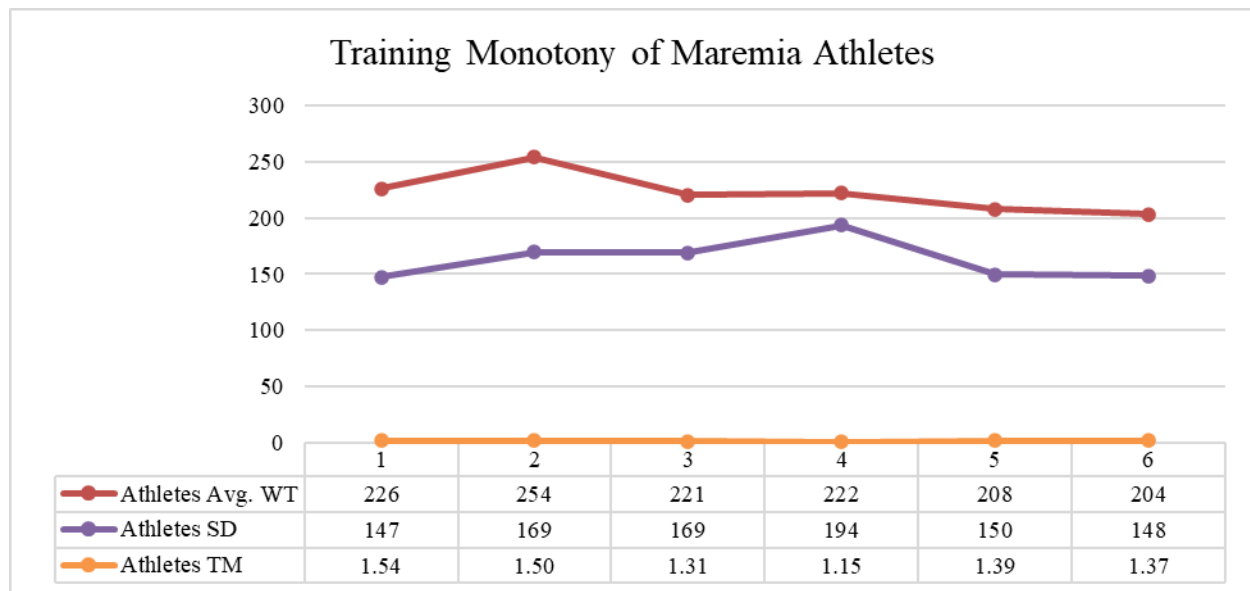


Figure 6 Maremina athletes training monotony

As figure 7 shows the highest monotony of athletes registered 1.79 and the lowest monotony also registered 1.37

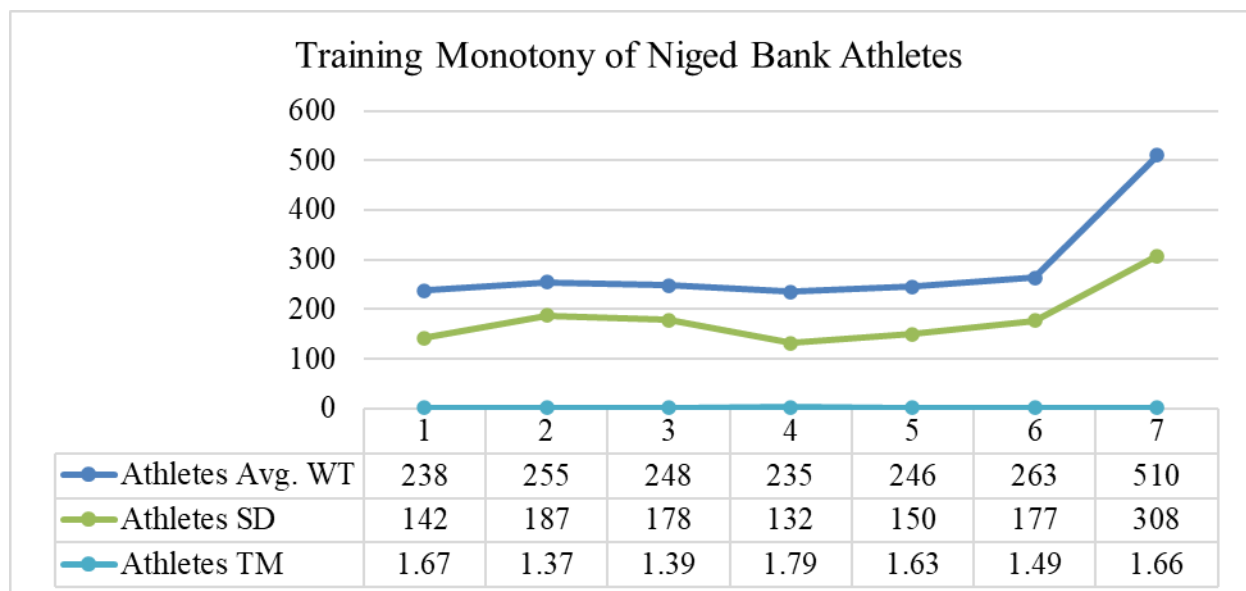


Figure 7 Ethiopia Niged Bank athletes training monotony

ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

4.5.3 Correlation between coaches' load and Athletes subjective response

In this section also discuss about the relationships between two variables in using paired samples t-test. Paired sample t-test is used to compare the means of two samples when each observation in one sample can be paired with an observation in the other sample. According to table 4.6. calculated a daily mean of coach's load vs a daily means of athlete's response. To calculate **mean** = sum of all data points / number of data points, **standard deviation** and **std. error mean** = std. deviation/ $\sqrt{n}$.

$$\bar{x} = \frac{\sum x}{n}$$

$\bar{x}$ = mean

$\sum x$ = sum of all data points

n = number of data points

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{(n - 1)}}$$

Table 4.6 Participant Descriptive Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Coach_sRPE1	3.59	29	.501	.093
	Athlete_sRPE1	4.41	29	1.680	.312
Pair 2	Coach_sRPE2	4.56	27	.506	.097
	Athlete_sRPE2	4.00	27	1.240	.239
Pair 3	Coach_sRPE3	3.97	29	.186	.034
	Athlete_sRPE3	4.31	29	.930	.173
Pair 4	Coach_sRPE4	4.17	29	1.002	.186
	Athlete_sRPE4	3.55	29	.870	.161
Pair 5	Coach_sRPE5	3.23	30	.430	.079
	Athlete_sRPE5	3.10	30	1.062	.194
Pair 6	Coach_sRPE6	6.93	29	.371	.069
	Athlete_sRPE6	7.86	29	.915	.170

Source: survey result

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When came to correlation, correlation analysis is a statistical method used to evaluate the strength of relationship between two quantitative variables. A high correlation means that two or more variables have a strong relationship with each other, while a weak correlation means that the variables are hardly related (Encyclopedia of Bioinformatics and Computational Biology, 2019).

Accordingly, table 4.7 the correlation between coaches 'micro-plan load and athletes' response of the study mostly correlated below the average; but relatively in second and fifth-day training program the relation between two is respectively moderate and nearly moderate. So as the study discussed on statement of the problem the plan organized only in one side made a problem; harmoniously the correlation between them is shows that.

Table 4.7 Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Coach_sRPE1 & Athlete_sRPE1	29	-.044	.821
Pair 2	Coach_sRPE2 & Athlete_sRPE2	27	.612	.001
Pair 3	Coach_sRPE3 & Athlete_sRPE3	29	.186	.034
Pair 4	Coach_sRPE4 & Athlete_sRPE4	29	.215	.263
Pair 5	Coach_sRPE5 & Athlete_sRPE5	30	.476	.008
Pair 6	Coach_sRPE6 & Athlete_sRPE6	29	-.449	.014

Source: survey result

ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

Table 4.8 Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Coach_sRPE1 - Athlete_sRPE1	-.828	1.774	.329	-1.502	-.153	-2.512	28	.018
Pair 2	Coach_sRPE2 - Athlete_sRPE2	.556	1.013	.195	.155	.956	2.850	26	.008
Pair 3	Coach_sRPE3 - Athlete_sRPE3	-.345	.974	.181	-.715	.026	-1.907	28	.067
Pair 4	Coach_sRPE4 - Athlete_sRPE4	.621	1.178	.219	.173	1.069	2.838	28	.008
Pair 5	Coach_sRPE5 - Athlete_sRPE5	.133	.937	.171	-.217	.483	.779	29	.442
Pair 6	Coach_sRPE6 - Athlete_sRPE6	-.931	1.132	.210	-1.362	-.501	-4.430	28	.000

Source: survey result

4.6 Athletes Load Response and Performance

People undertake physical training for a variety of reasons; however, the main objective is to improve performance. Other reasons may include weight loss, general fitness improvement, or rehabilitation from injury. Regardless of the reason, there are a number of principles which need to be adhered to when designing training programs to help achieve optimal training outcomes. In order to obtain those values, there should be balance between the training load with individual ability and performance. Otherwise, over training or reversibility may occur. So, to avoid these problems the program design participates all trainer and trainees. In regard to the load response and performance of athletes the study reviewed the performance of different athletes of selected clubs from Ethiopian athletics federation.

Accordingly result obtained from Ethiopian athletics federation website; “Ethiopian short, middle-distance and race-walking athletics clubs track and field event competition 2011, 2012 E.C. and 48th Ethiopian athletics championship.” and athletes’ subjective response to the coaches micro-plan load response obtained as of survey result those athletes have a better result is his/her

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response nearest to coaches micro-plan load and above. Correspondingly, athletes there training age is near maximum have a better result. As result and evidence shows the more experience have the better result.

Discussion

The main purpose of this study was to assess the load distribution and the match between coaches' micro plan load and the subjective load response of individual middle-distance athletes using various types of training load monitoring. To the author's knowledge, this study is the first of its kind to provide analysis of internal TL for middle-distance events in the selected clubs and in country level.

Internal TL in this study was monitored through the use of sRPE. Within this study, the collection of sRPE was initially implemented after 30 min to reduce the effect of the last physical exertion completed on the overall training exertion score (Foster et al., 2001). Based on the sRPE values, training time, and distance covered, the following indices were calculated: daily training load, sum of all training loads for the week, training monotony and the statistical analysis were incorporated.

Monitoring internal load will helps to inform future training decisions such as whether to push or hold back an athlete, and can help track individual athletes' adaptations to training. The methods and technique we used for monitoring of training load in this study using sRPE which is a useful application to calculate internal training load. Accordingly, athletes are required to subjectively rate training session intensity using a RPE scale (0 to 10) based on the understanding that they can inherently monitor the physiological stress their body is experiencing. A single arbitrary unit for internal TL is calculated by multiplying training duration (mins) by the RPE intensity value provided retrospectively by the athlete.

We investigated the training load responses between middle-distance event runners of three clubs (Mekelakeya, Federal Maremia and Ethiopia Negid Bank), during a one-week training.

An attractive feature of the Session-RPE is that the perception of effort is a reflection of the combination of the physiological stress at that time, whether that be consequence of resistance

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training, high-intensity interval training or plyometric training. Studies have shown that the sRPE is a valid and reliable measure of TL during constant load exercise (Herman, 2006).

To investigate much between coach and athletes for the six consecutive work day at every time pint after exercise, the coaches intended RPE and athlete experienced sRPE were analyzed. The trainee is asked to rate his relative perception of effort sRPE at a set time after completion of the entire session, typically 30 minutes. Collection of RPE about 30 minutes after each training session ensures that the perceived effort referred to the whole sessions rather than the most recent exercise intensity. Training load is calculated by multiplying session rating of perceived exertion (sRPE) by the duration of session, giving an internal subjective measure of training load. Total daily load is calculated by adding the load from each session that day.

As expected, the value of sRPE was not varied significantly between the athletes in selected clubs. The mean sRPE coaches training load given within the range of 3 - 6.93, and the standard deviation varies between 0 - 0.371. This finding with standard deviation value zero indicates that, in some of the training days the coaches micro-plan session training load for all trainee are same load. In the same way, the mean sRPE and standard deviation of athletes based on the subjective response have been computed, the result indicates that mean sRPE and the standard deviation varies within the range of 2.83 – 7.86 and 0.577 – 1.967. From the training days, one sRPE values represent zeroes. Zeroes are important as they represent off-days. If a zero were to be replaced by a blank cell, then that would change the average daily load, monotony, and strain.

From the result explained in table of each six consecutive training session, there were variation between the coaches' load plan and the athlete's subjective load response. Multiple relationships have been reported sRPE with exercise intensity and the physiological response to training. Findings of (Manzi et al. 2010) suggest that the sRPE is a valid method for coaches to quantify internal TL and manage training loads.

These findings supported by previous studies (Brink et al. 2014 & 2017), and (Foster et al. 2001) that athletes perform at significantly lower intensities when the coach intended RPE is high and athletes perform at significantly higher intensities when the coach intended RPE is low.

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From the result the load given by the coaches is varied with the expect or subjective judgments of the athletes. At different studies, sRPE can be used for future planning by estimating training intensities and duration to form the basis of the periodical training plan. Monitoring athletes daily can provide an indication of how they cope with the periodical training plan (Comyn, and E.P, 2013). The results suggest the sRPE can be accurately recorded for monitoring of the TL and improve the performance of athletes during a training session.

An athlete presenting higher internal load data compared to other individual during a standard external load session may indicate signs of fatigue or reduced fitness. In contrast, an athlete showing decreased internal load in the same session would indicate increased fitness and an ability to cope with the stress being placed on them.

Ideally, the perceptions of training load should match between athlete and coach to have optimal adaptation, assuming that the plan coach uses are scientifically and optimally planned.

Perhaps athletes have a hard time limiting their exercise intensity when given RPE is lower and they are not as rested when it comes time to perform at very high intensities. This would cause them to report sRPE values that are much lower than the given RPE of coaches. Although the coach in this study had extensive experience with sRPE, the variation between coach and athlete may also be due to unfamiliarity with the use of sRPE. The RPE-based training load between athletes and coaches has been described and studied in the literature before in different sports disciplines. Therefore, coaches need time to learn how to evaluate the status of their athletes when prescribing exercise. In addition to the quantifying the amount of training load, the correlation between the athletes and coaches plan have been analyzed. According to the finding from the table 4.7, the correlation between coaches 'micro-plan load and athletes' response of the study mostly correlated below the average.

In addition to investigating the much between coaches and athletes RPE, a score for training monotony (TM) were calculated, which can be used to indicate the variability in TL. Training monotony is an important element to making an athlete's season successful. it's actually a metric that evaluates loading fluctuations. An athlete can become mentally bored with a training program that still physically promotes improvement.

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Total load and type of load stress will develop as finer metrics of adaptation, and coaches will need to consider how the body responds to types of stress, not just totals and accumulation.

Training monotony audits the variability of the load but doesn't promise adaptation or even improvement. The challenge with sports training is to make sure that biological loading is effective while motivation, or willingness to train, continues with physical improvement. It is long been recognized the athletes cannot train hard every day. One approach to measuring monotony is statistically analyzing the variation in workouts. The first stage is to work out a measure of the daily sRPE. From this daily sRPE it's possible to calculate the standard deviation for each 7-day period. The relationship between the daily average sRPE value and the standard deviation can provide a metric for monotony.

Form the survey data of athletes training monotony, the monotony variations between athletes were analyzed. Accordingly, the highest monotony of athletes registered within the athletes of the three clubs were 1.88, 1.50 and 1.79, Mekelakeya, Maremia and Ethiopia Niged Bank clubs' athletes respectively. The finding shows that, the monotony between clubs are not varied in significance, but finding it shows deviation within athletes. Modern training plans recommend a few hard days per week, with the other days as easier or rest days. According to (Marco Altini) the Founder of HRV4Training described the TM below 1.5 is preferable, mean alternating high and low intensity workouts. A high training monotony indicate the training program is insufficient this leads athletes to detraining.

CHAPTER FIVE

5, CONCLUSION AND RECOMMANDATION

5.1 Conclusion

Due to the fact that coach plan is a training program that prepare athlete to competition physically and psychologically on its optimal performance in specific period of time. So, to reaches athletes on its optimal performance monitoring training load and design a training program that participates athletes in designing training program is very advantageous.

From the first parts of data analysis and result obtained the participation and the training age distribution of the athletes in club were not satisfactory and participatory.

According to session of training, the micro-plan and subjective response of athletes for given load, the match between coach's micro-plan load and the subjective load response of the athletes were analyzed. In each sessions of training, the micro-plan load distributions vary with athletes' load subjective response. This implies that, the relation between coach's micro-plan load and athlete's load subjective response is not significantly strong. This will have negative impacts on the performance of the athletes and middle-distance result. In other hand the distributions of load between coach's are comparable.

According to the data collected from the Ethiopia athletics federation about the performance history of athletes, most of athletes have poorly performed. But those of athletes who have long training age or more experienced with coaches indicate very significant relation between their subjective load responses with assigned micro-plan loads of coaches. Accordingly, the coaches micro-plan load distribution and the subjective load responses of athlete's micro-plan were varied from day to day. The weekly micro-plan of the coaches was not developed with inclusion and feedback of the athletes.

The finding of the study shows that the session RPE is very essential tool for measuring the match between coaches' load and athlete's subjective response and for quantification of training load. Therefore, result shown most athletes of load response throughout the week is different with coaches' load.

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According to finding the training monotony of athletes in Mekelakey, and Ethiopian Niged Bank were above 1.5, so the athletes subjective load response and the predefined coaches' micro-plan load was varied. These shows the training was insufficient in these case athletes leads to detraining. Generally, the finding of athletes' micro-plan load response and evidence get from Ethiopian athletics federation website result list shown the middle-distance performance was unsatisfactory.

5.2 Recommendations

Based on the conclusion constructed above the following recommendations is made:

- The findings of the study shown a micro-plan load given by the coaches and the subjective loads responses of the athletes were varied, this variation will affect the performance of the athletes and the professional abilities of the coaches. These variations are the result of the one way pre-micro plan of load distribution designed. To avoid this difference, the load distribution micro-plan will be designed in two ways from coaches to athletes and vise versa. Based on the finding obtained coaches and athletes necessarily work with to longest period of time for get better result and familiarized with RPE, because athletes how have good result has their training age was has long training age. To improve the performance athletes, and to be stayed for the maximum age of training with in events, the training load monitoring (internal and external load) have to be carried out in day-to-day session of training.
- One of the methods to monitor the training load and improve the athlete's performance is sRPE and Training monotony. Training monotony was a very essential method of presenting training program of variations or similarities in between training program.
- As most scholars and coaches use and presents Session RPE, is the valuable means of monitoring training load.
- It is an open way to interested on the topic.

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**ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND
MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE**

Appendixes

Appendex-1

Club Name	sex	Events	T. A	H(cm)	W(kg)
Mekelakeya	0	3000	5	1.61	52
	0	3000	5	1.58	50
	1	3000	6	1.80	59
	1	3000	7	1.82	59
	1	3000	4	1.80	63
	1	3000	4	1.80	64
	1	1500	7	1.70	55
	1	1500	8	1.69	55
	0	1500	7	1.66	52
	0	1500	2	1.70	52
	1	1500	5	1.82	70
	1	800	2	1.85	64
	1	800	7	1.72	60
	1	800	6	1.75	61
	1	800	4	1.82	66
	0	800	8	1.67	52
	0	800	4	1.67	55
Federal Maremia	1	800	6	1.71	62
	1	800	2	1.73	60
	1	1500	6	1.82	64
	1	1500	6	1.74	61
	1	1500	8	1.75	62
	1	1500	4	1.67	54
Ethiopia Niged bank	1	1500	3	1.8	58
	0	1500	2	1.68	49
	1	1500	6	1.66	61
	1	1500	8	1.75	62
	1	800	6	1.72	56
	0	800	4	1.6	48
	0	3000	4	1.64	48

Demographic characteristics of participants

0 = female, 1 = male

x

ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

Appendex-2

Amharic version questionnaire

አዲስ አበባ የኒቨርስቲ ድህረ ምረቃ ትምህርት ቤት የስፖርት ሳይንስ ትምህርት ክፍል

ለመካከለኛ ርቀት ሯጮች የተዘጋጀ መጠይቅ

የዚህ መጠይቅ ዋና አላማ አሰራጣኝ ላዘጋጀው ሰልጠና የአትሌቶችን ምላሽ ለማወቅና ከቀጣይ የሰልጠና ፕሮግራም ጋር ለማጣጣም ይቻል ዘንድ መረጃ ለመሰብሰብ የተዘጋጀ መጠይቅ ሲሆን፤ መረጃው የተሟላ እንዲሆን የእርሶን ስሜት ይገልጻል የሉትን አማራጭ በታማኝነት ይሞሉት ዘንድ በትህትና እጠይቃለሁ። ለማያረጉት ቀና ትብብር ሁሉ በቅድሚያ እመሰግናለሁ።

መግቢያ

የሚከተሉትን መረጃዎች በተሰጡት ክፍት ቦታዎች በመመላትና በተዘጋጀው ሳፒን ውስጥ የ “✓” ምልክት በማስቀመጥ ይሙሉ።

ስም:- _____ ያታ:- _____ ወንድ ☐ ሴት ☐

የሰልጠና ቆይታ/ክፍል:- _____ ክብደት:- _____ ቁመት:- _____

የሚወዳደሩበት የውድድር አይነት 800ሜትር ☐ 1500ሜትር ☐ 3000ሜትር ☐

ከታች በተቀመጠው ሰንጠረዥ ከተዘረዘሩት አማራጮች ቁጥሮች አንዱን የ “✓” ምልክት በማስቀመጥ ይምረጡ።

1. የአለቱ ሰልጠና ምን ያህል ከባድ ነው? (How hard the training)

Rate of Perceived Exertion Scale

መጠን	ገላጭ	1ኛ ቀን	2ኛ ቀን	3ኛ ቀን	4ኛ ቀን	5ኛ ቀን	6ኛ ቀን	7ኛ ቀን
0	እረፍት							
1	በጣም በጣም ቀላል							
2	ቀላል							
3	መካከለኛ							
4	በተወሰነ ደረጃ ከባድ							
5	ከባድ							
6	-							
7	በጣም ከባድ							
8	-							
9	-							
10	ከፍተኛ							

**ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PLAN AND
MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE**

Appendex-3

**Addis Ababa University
School of Graduate Studies
Department of Sport Science**

A Questionnaire to be filled by Middle-distance Athletes

General Direction

Dear respondents! The main purpose of this questionnaire is to collect relevant information for middle-distance athlete's subjective response to coach's micro-plan.

Instruction I

Please, fill the space below and put the (✓) sign on the box.

Name _____ Gender: Male: ☐ Female: ☐

Training Age: _____ Height: _____ Weight: _____

Event: - ☐ 800m ☐ 1500m ☐ 3000m

Instruction II

From the alternatives given table below put the (✓) sign the load you perceived in each session.

1. "How was your workout?"

Rate of Perceived Exertion Scale

Rating	Descriptor	Day-1	Day-2	Day-3	Day-4	Day-5	Day-6	Day-7
0	Rest							
1	Very, Very Easy							
2	Easy							
3	Moderate							
4	Somewhat Hard							
5	Hard							
6	-							
7	Very Hard							
8	-							
9	-							
10	Maximal							

ASSESSING THE MATCH BETWEEN THE COACH'S MICRO-PAN AND MIDDLE-DISTANCE ATHLETES' SUBJECTIVE LOAD RESPONSE

Apendex -4

Coaches predefined Micro-plan load Distribution

