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Ethiopia in world athletics

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Abstract

The purpose of this paper is to explore the way in which the known country Ethiopia dominates and shines in the long distance context. It's a well known fact that Ethiopians fixed the foot path strongly in distance races especially Long in International arena. The country has its own unique nature to produce the best runners in Olympics, World Championships, World Cross country races and other International events too. The training environment has its own demographic and biological merits viz. an elevation of 2000 meters above from sea level, obviously which favors for endurance athletes and the morphology of athletes are gifted by birth itself. The existing country produces many Olympians like Abebe Bikila, Mamo Wolde, Derartu Tulu, Fatuma Roba, Haile Gebre Selassie, Kenenisa Bekele, Muruts Yifter, Tirunesh Dibaba and many more. In Ethiopia, long Distance was introduced in the year 1946. Since 1990s, the globe observes the rise of North and East African runners in long distance events which witnessed the birth of a new rising star in the field of long distance running. Kenyan and Ethiopian athletes, in particular, have since remained dominant in these events. Many factors have been proposed to explain the extraordinary success of the Kenyan and Ethiopian distance runners are predetermined physiology, genetics, nutritional aspects, strong morphological factors, well balanced psychological set up, scattered talents and most importantly an urge to boost their economic background. The journey of success of Ethiopia will break the record of 10+25= 45 and this would be uncountable for the forthcoming events.

Keywords: Ethiopia, athletics, success, talent, distance running

Introduction

It's a well known fact that Ethiopians fixed the foot path strongly in distance races especially long in International arena. The country has its own unique nature to produce the best runners in Olympics, World Championships, World Cross country races and other International events too. The training environment has its own demographic and biological merits viz. an elevation of 2000 meters above from sea level, obviously which favors for endurance athletes and the morphology of athletes are gifted by birth itself. The existing country produces many Olympians like Abebe Bikila, Mamo Wolde, Derartu Tulu, Fatuma Roba, Haile Gebre Selassie, Kenenisa Bekele, Muruts Yifter, Tirunesh Dibaba and many more. In Ethiopia, long Distance was introduced in the year 1946. Since 1990s, the globe observes the rise of North and East African runners in long distance events which witnessed the birth of a new rising star in the field of long distance running. Kenyan and Ethiopian athletes, in particular, have since remained dominant in these events. Many factors have been proposed to explain the extraordinary success of the Kenyan and Ethiopian distance runners are predetermined physiology, genetics, nutritional aspects, strong morphological factors, well balanced psychological set up, scattered talents and most importantly an urge to boost their economic background. The journey of success of Ethiopia will break the record of 10+25= 45 and this would be uncountable for the forthcoming years too.

Rise of Ethiopia in International Events

Long distance event introduced in the year 1946. In Ethiopia Long Distance was introduced in the year 1946-1949 (1940-1941 EC). It was first played in the Tefari Mekonnen and Haileslase secondary schools was introduced by physical Education teachers those comes from Canada. After the mid of 1940s in less organized system athletics participants participates in governmental organization, military camps, and air forces, polices forces etc., peoples were

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participates in athletics in Ethiopia. Beginning of 1950s Athletics more popular in most primary and secondary schools of Addis Ababa, inter school competition which was held every year during that time (Ethiopian Olympic committee, 2000).

In the modern era of Athletics in Ethiopia after the member of IOC in 1948 participate in

Melbourne Olympic number of athletes was developed in Ethiopia especially in the military camps. The foundations of Ethiopia Athletics Federation Ethiopia in 1953 were registered member of International Amateur Athletics Federation (IAAF) and participated in deferent International competitions (Ethiopian Olympic committee, 2000).

The legendary Abebe Bikila gave humanity lasting images of triumph, humbleness and victory. Abebe Bikila (the Bare Feet King) got first Olympic marathon gold by barefoot. Miruts' earned his country Ethiopia two gold medals at the Moscow Olympics in 1980 in the 5000 and 10000 meter races. This unusual burst of energy that gave him victory after victory earned him the nick-name "Miruts the Shifter".

There is the Lion himself-Haile Gebre Selassie (also known as Emperor Gabe by his fans around the world). Ethiopian calls him "Jegnaw" (Fearless Hero). As the legend continues, Kenenisa Bekele seems poised to take Ethiopian athletics and dominance in long distance running to newer heights.

Downfall of European countries

Most of the champions have come from the highlands of Arsi-South Eastern part of Ethiopia as well as the vicinities of the capital – Addis Ababa (IAAF, 2010). In the 1980s, the international scene of medium- and long-distance running changed dramatically. Nearly all running events were dominated by European athletes.

During 1980s, European dominated in these events 50% and only 30% were from Africa. In 1990 on words, the percentage of European runners has fallen to 11% and African runners had raised to 85% of dominance. Out of which, Kenyans are dominated 55%. 90% of world record set by these two countries such as Ethiopia and Kenya. Top 10 positions of the world records holds by Kenya and Ethiopia (Rodrigo Luiz Vancini and *et al.*, Open Access J Sports Med. 2014; 5: 123–127)

The loss of supremacy by the European runners is not caused by their decreasing running speed. The reality is that the African runners are running faster and faster yet the years are moving.

Nature and Nurture

Many factors have been identified as having an influence on success in distance running. The observation of significant relationships between VO_2 max, the fraction of slow twitch fibers and the fraction of VO_2 max which can be utilized and running economy has implicated these factors, and a number of others, as being associated with success in distance running (Costill *et al.*, 1976; Daniels, 1974; Rusko *et al.*, 1978) [2, 3, 6]. Running events from the middle distances (800-10,000 m) to long distances (half- and full-marathon) are dominated by East African black runners (Noakes, 2002; Noakes, 2000; Saltin, 1995). These populations may have a genotypic or phenotypic advantage when it comes to endurance running; several investigators have searched for phenotypic differences between black and white endurance athletes from South Africa, Kenya, and Eritrea (Bosch *et al.*, 1990; Coetzer *et al.*, 1993; Lucia *et al.*, 2006; Saltin, 1995; Weston *et al.*, 2000).

Two studies indicated that black runners ran at a higher percentage of their maximum oxygen consumption (VO_2 max) during either a simulated treadmill marathon (Bosch *et al.*, 1990) (higher percentage of their VO_2 max-marathon) or at a 10-km race pace (Weston *et al.*, 2000)

While there are many possible combinations that might lead to elite performance in endurance events, it appears that extremely high values for VO_2 max and outstanding running economy are rarely seen in the same person (Daniels, 1974; Saltin, 2003; Joyner & Coyle, 2007) [3].

East African runners do not have exceptional high values for VO_2 max or lactate threshold, but generally have outstanding running economy (Billat *et al.*, 2003; Larsen, 2003; Noakes, 2002; Saltin *et al.*, 1955).

In general, sports performance requires the integrated combination of many intrinsic (genetic, biological, etc), and extrinsic factors (exposure to the stimulus, environment, nutrition, technical-tactical training techniques, sport specialization, competition, socio-cultural and financial aspects, motivation, career management, scientific support, etc). Some of these are trainable (physiological, psychological, and biomechanical) and some are taught (technical and tactical), while others are beyond the control of athletes and coaches, such as chronological age and genetic factors. In fact, it has long been suggested that genetic background plays an important role in sporting potential, being responsible for determining the anthropometric, cardiovascular, and muscular characteristics of adaptation to physical training.

Several factors in the complex interaction between genotype and phenotype have been proposed to explain the particular success of African runners, or the "African runners' phenomenon", including Genetic predisposition; high maximum oxygen uptake (VO_2 max) values, Highest concentration of hemoglobin, Relatively high hematocrit, Good metabolic efficiency (based on somato type characteristics), Favorable muscle fiber composition, Profile of oxidative enzymes, The traditional Kenyan/Ethiopian diet, Constant altitude training and Motivation to urge economic success and social mobility. (Rodrigo Luiz Vancini and *et al.*, Open Access J Sports Med. 2014; 5: 123–127. Published online 2014 May 20. doi: 10.2147/OAJSM.S61361)

It does not mean that the constant altitude, genetic type and food alone give better result for this country. Naturally, the athlete himself physically, mentally, socially strong enough to obtain any sort of resistance in order to boost their economic set up in the society.

Table 1: The medal tally of Ethiopia and Kenya at London, 2012

2012 Olympic Results		
	Ethiopia	Kenya
No. of Medals	3+1+3=7	2+4+5=11

Source: https://en.wikipedia.org/wiki/2012_Summer_Olympics_medal_table

Success behind the success

Wilber RL and Pitsiladis YP, (2012) [7] several factors have been proposed to explain the extraordinary success of the Kenyan and Ethiopian distance runners, including (1) genetic predisposition, (2) development of a high maximal oxygen uptake as a result of extensive walking and running at an early age, (3) relatively high hemoglobin and hematocrit, (4) development of good metabolic "economy/efficiency" based on somato type and lower limb characteristics, (5) favorable skeletal-muscle-fiber composition and oxidative enzyme profile, (6) traditional Kenyan/Ethiopian diet, (7) living and

training at altitude, and (8) motivation to achieve economic success.

Challenges and constraints

These athletes face lot of challenges to succeed. The factors are Lack of financial aspects, believes on traditional form of training, low economic status, insufficient job opportunity and unemployment, insecure life, behind in advanced training systems and methods, less scope to participate in Intl. competitions, unhealthy lifestyle, constant famine and drought and Lack of awareness of female athletes.

Table 1: Below is a list of Ethiopian medalists in major championships and the Olympic Games.

Gold	
Abebe Bikila	Marathon- Rome'60 and Marathon-Tokyo'64
Mamo Wolde	Marathon- Mexico City' 68
Miruts Yifter	5000m and 10000m- Moscow'80
Derartu Tulu	10000m- Barcelona'92 and 10000m-Sydney'2000
Fatuma Roba	Marathon- Atlanta'96
Haile Gebrselassie	10000m- Atlanta'92 and 10000m-Sydney'2000
Million Wolde	5000m- Sydney'2000
Gezhagne Abera	Marathon- Sydney'2000
Kenenisa Bekele	10000m- Athens'2004
Meseret Defar	5000m- Athens'2004
Kenenisa Bekele	5000m & 10000m-Beijing'2008
Tirunesh Dibaba	5000m & 10000m-Beijing'2008
Meseret Defar	5000m, London'2012
Tirunesh Dibaba	10000m, London'2012
Tiki Gelena	Marathon, London'2012
Silver	
Mamo Wolde	10000m- Mexico City'1968
Gete Wami	10000m- Sydney'2000
Sileshi Sihine	10000m- Athens'2004
Ejegayehou Dibaba	10000m- Athens'2004
Kenenisa Bekele	5000m- Athens'2004
Sileshi Sihine	10000m-Beijing' 2008
Dejen Gebremeskal	5000m, London'2012
Bronze	
Miruts Yifter	10000m- Munich'72
Mamo Wolde	Marathon- Munich'1972
Eshetu Tura	3000m Steeplechase- Moscow'80
Addis Abebe	10000m- Barcelona'92
Fita Bayissa	5000m- Barcelona'92
Gete Wami	10000m- Atlanta'96
Gete Wami	5000m- Sydney'2000
Tesfaye Tola	Marathon- Sydney'2000
Assefa Mezgebu	10000m- Sydney'2000
Derartu Tulu	10000m- Athens'2004
Tirunesh Dibaba	5000m- Athens'2004
Tsegay Kebede	Marathon, Beijing'2008
Meseret Defar	5000m,Beijing'2008
Tariku Bekele	10000m,London'2012
Tirunesh Dibaba	5000m, London'2012
Sofia Assefa	3000m steeplechase, London'2012

Table 2: Medals at IAAF World Championships

Gold	
Haile Gebrselassie	10000m- Stuttgart'93, Gothenburg'95, Sevilla'97, Athens'99
Gete Wami	10000m- Athens'99
Derartu Tulu	10000m- Edmonton 2001
Gezhagne Abera	Marathon- Edmonton 2001
Tirunesh Dibaba	5000m- Paris 2003, Helsinki 2005; 10000m- Helsinki 2005
Berhane Adere	10000m- Paris 2003
Kenenisa Bekele	10000m- Paris 2003; Helsinki, 2005
Kenenisa Bekele	10000m,Osaka, 2007
Meseret Defar	5000m, Osaka, 2007
Tirunesh Dibaba	10000m, Osaka, 2007
Kenenisa Bekele	5000m, Berlin, 2009'
Kenenisa Bekele	10000M, Berlin, 2009
Mohammed Aman	800m, Moscow, 2013
Meseret Defar	5000m, Moscow, 2013
Tirunesh Dibaba	10000m, Moscow, 2013
Genzebe Dibaba	1500m, Beijing, 2015
Almaz Ayana	5000m, Beijing, 2015
Silver	
Wedajo Bulti	Marathon- Helsinki'83
Fita Bayissa	5000m- Tokyo'91
Haile Gebrselassie	5000m- Stuttgart'93; 10000m- Paris 2003
Derartu Tulu	10000m- Gothenburg'95
Berhane Adere	10000m- Edmonton 2001, Helsinki 2005
Werknesh Kidane	10000m- Paris 2003
Sileshi Sihine	5000m and 10000m- Helsinki 2005
Meseret Defar	5000m- Helsinki 2005
Ibrahim Jeilan	10000m, Daegu, 2011
Sileshi Sihine	10000m,Osaka,2007
Deresse Mekonnen	1500m, Berlin 2009
Meselech Melkamu	10000m, Berlin, 2009
Hagos Gebrhiwet	5000m, Moscow, 2013
Ibrahim Jeilan	10000m, Moscow, 2013
Lelisa Desisa	Marathon, Moscow, 2013
Yemane Tsegay	Marathon, Beijing, 2015
Senbere Teferi	5000m, Beijing, 2015
Gelete Burka	10000m, Beijing, 2015
Bronze	
Haile Gebrselassie	10000m- Edmonton'2001
Kutre Dulecha	1500m- Athens 1999
Ayelech Worku	5000m- Edmonton 2001
Million Wolde	5000m- Edmonton 2001
Sileshi Sihine	10000m- Paris 2003
Ejegayehou Dibaba	5000m and 10000m- Helsinki 2005
Tsegaye Kebede	Marathon, Berlin, 2009
Meseret Defar	5000m, Berlin, 2009
Wude Ayalew	10000m, Berlin, 2009
Aselefech Mergia	Marathon, Berlin, 2009
Dejen Gebremeskel	5000m, Daegu, 2011
Imane Merga	10000, Daegu, 2011
Feyisa Lilesa	Marathon, Daegu, 2011
Meseret Defar	5000m, Daegu, 2011
Genzebe Dibaba	Marathon, Moscow, 2013
Almaz Ayana	5000m, Mosocw, 2013
Belaynesh Oljira	10000m, Moscow, 2013
Sofia Assefa	Steeplechase, Moscow, 2013
Hagos Gebrhiwet	5000m, Beijing, 2015
Genzebe Dibaba	5000m, Beijing, 2015

Conclusion

Elite sporting performance results from the combination of innumerable factors, which interact with one another in a poorly understood but complex manner to mould a talented athlete into a champion. Within the field of sports science, elite is understood to be the result of both genotypic and phenotypic factors.

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