

**EVALUATION OF KNOWLEDGE AND ATTITUDES ON DOPING BY
FOOTBALL ATHLETES, COACHES AND SPONSORS IN MALAWI**

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UNIVERSITY**

JULY, 2019

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University or for any other award.

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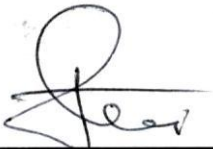
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DEDICATION

I dedicate this work to my late grandfather, Mr. Presvo Swizan Kaoche, for being my academic push. To my beloved children, this work must be a reminder on the need to work hard in life regardless of situations and age.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA:	Analysis of Variance
AAS:	Anabolic Androgenic Steroids
FAM:	Football Association of Malawi
FIFA:	Federation for International Football Association
IAAF:	International Athletics Association Federation
JCE:	Junior Certificate of Education
MADO:	Malawi Anti-Doping Organization
MSCE:	Malawi School Certificate of Education
NADO:	National Anti-Doping Agency
PED:	Performance Enhancing Drugs
PEM:	Performance Enhancing Methods
PES:	Performance Enhancing Substance
SPSS:	Statistical Package for Social Scientists
UNESCO:	United Nations Education, Scientific Cultural Organization
USA:	United States of America
WADA:	World Anti-Doping Agency

OPERATIONAL DEFINITIONS OF TERMS

Football Athlete: An athlete registered by the Football Association of Malawi and is playing competitive amateur football for any club participating in a Malawi Super League football competition.

Athlete: a person actively playing amateur football in the Super League of Malawi.

Attitude: individual's positive or negative evaluation of using the performance enhancing substances in amateur football.

Black Market: the act of selling and buying banned by WADA on performance enhancing substances in Malawian football.

Coach: The technical person in charge of training of football athletes in a football club.

Doping: Refers to the presence of a prohibited substance in amateur football athlete's sample or use or evidence of attempted use of the prohibited substance by an amateur football athlete.

Knowledge: Refers to facts or information on the use of performance enhancing substances acquired through experience or education.

Prevalence: Proportion of athletes who use performance enhancing substances and related methods.

Sponsor: Refers to an organization or person providing financial, material or other kind of help for competitive amateur football activities to take place at a higher level in Malawi.

ABSTRACT

Knowledge and attitude on the use of performance enhancing substances among athletes are important aspects in the fight against doping in sports. This study determined knowledge and attitudes of football athletes, coaches and sponsors on doping in Malawi. It established reported prevalence of the use of performance enhancing substances among football athletes, assessed knowledge of football athletes, coaches and sponsors and examined their attitudes respectively. It respectively determined whether there was an association between selected demographic factors of football athletes, coaches and sponsors and their knowledge and attitudes on the use of performance enhancing substances in football in Malawi. The study targeted 450 football athletes, 45 coaches, 15 team sponsors and 8 competition sponsors in Malawi. Football clubs for athletes and coaches were randomly sampled in the cities of Blantyre and Lilongwe. 240 athletes and 24 coaches attached to the sampled football clubs participated in the study. Sponsors (15) of football were purposively sampled from the cities of Blantyre and Lilongwe. Using the cross section survey design, the selected athletes, coaches and sponsors responded to self-reported structured questionnaires. The obtained data was analysed using Pearson Chi-Square, One Way Analysis of Variance (ANOVA) and Post Hoc Tukeys' HSD in the Statistical Package for Social Scientists (SPSS 20). The study found that participants had high (73.4%) medium (20.8%) and low (5.8%) levels of knowledge on the use of performance enhancing substances. Athletes, coaches and sponsors had negative attitude towards doping. Association existed between knowledge and age of athletes; athletes ($p < 0.001$), coaches ($p 0.006$) and sponsors ($p 0.012$); experience of athletes ($p < 0.001$) and sponsors ($p 0.012$) on doping. Association further existed between the attitude and age of athletes; athletes ($p 0.001$); education of athletes ($p 0.001$) and sponsors ($p 0.025$) on doping and experience of the athletes ($p < 0.001$) and sponsors ($p < 0.001$) towards doping. There were significant differences in knowledge on doping drugs between athletes (20.76 ± 3.35) and coaches (18.54 ± 7.56) and between athletes (20.76 ± 3.35) and sponsors (21.40 ± 6.95) $p .001$. There were significant differences in attitude between coaches (14.58 ± 1.13) and sponsors (12.13 ± 3.50), $p .003$. The significant differences in knowledge existed between athletes and coaches (2.22 ; $p 0.011$) and coaches and sponsors (2.86 ; $p 0.042$). Further significant differences in attitudes on doping existed between football coaches and sponsors (3.47 ; $p 0.003$). It is recommended that Malawi Government should formulate deliberate policy that will be used to fight against doping in football in Malawi. Athletes, coaches and sponsors need to be engaged in awareness programmes on doping for them to acquire more knowledge. Malawi Anti-Doping Organisation needs to design a website where athletes can obtain information on doping. Further studies are required on doping in junior football with emphasis on gender and its socioeconomic impact in Malawi.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Use of performance enhancing substances (PES) or drugs and their related methods has been one of the critical challenges facing sports industry for decades. The use of PES is detrimental to athletes and society. The use of PES has negative consequences on health of athletes, sponsorship and fairness of competition (Skarberg & Engstrom, 2007; Sparre 2008; Kaur, Masaun & Bhatia, 2014). Consequently, efforts have been made by organizations such as World Anti - Doping Agency (WADA), Sports Federations (SFs) and International Olympic Committee (IOC) to prevent athletes from doping. It is estimated that the global prevalence of doping among athletes in sports is 1-2% with football having less than 0.45% (Mottram, 2005; Dvorak, Graf-Baumann, Hooghe, *et al.*, 2006; Hon, Kuipers&Bottenburg, 2014). Football is reported to be the most popular sport in the world and has over 190,000 elite players in more than 205 countries. A meta-analysis of studies on doping in Africa from the 1970s to 2013 showed that there was a 2.4% prevalence of doping among athletes (Sagoe, Molda, Andreassen, *et al.*, 2014).

The reasons that influence athletes to dope included the desire to win the competition, acquiring psychological motivation, financial gains, social recognition, peer pressure, influence from role models and developing desired physical image (Tangen& Breivik, 2001; Muller, 2013; Kaur, *et al.*, 2014). It can also be argued that apart from the fore mentioned reasons for doping, demographic features such as age, gender, education,

experience and ethnicity of football athletes, coaches and sponsors mediate prevalence of doping in terms of knowledge and attitudes. It is expounded that young and less experienced athletes are more likely to use performance enhancing substances than the rest with the purpose of pleasing coaches and peers (Humphreys, 2007; Muwonge, Zavuga & Kabenge, 2015). It is also argued that as male athletes pursue masculinity egos, they are more likely to use performance enhancing substances than female athletes (Perry, Lund & Deninger, 2005; Sanchez & Zabala, 2013).

It is further believed that highly educated athletes are unlikely to use performance enhancing substances as they become aware of the negative health consequences of their bodies (Sertibaş, Akdeniz, Yılmaz, *et al.*, 2015). In addition, Corluka, Gabrilo and Blazevic (2011) found that ethnicity was influential as regards to knowledge of doping with Bosniaks athletes displaying best knowledge of doping than Croaks and Serbs. Age and experience of football athletes were significantly influential on attitudes towards doping (Corluka, *et al.*, 2011).

Efforts to fight doping resulted in reduction of incidences among athletes (World Anti-Doping Agency, 2012). One of the reasons behind the reduction in doping incidences included the emphasis on programmes that test, sanction and educate athletes, coaches and physicians against the practice (Gucciardi, Jalleh & Donovan, 2011; Nolte, Steyn, Kruger, *et al.*, 2014). Coaches are also taken to be a major factor on doping in sports, including football, so much that athletes feel obliged to use performance enhancing substances and related methods (Laure, Thouvenin & Lecerf, 2001). Thus, there is a need to change the attitude towards use of performance enhancing substances by athletes, coaches

and other stakeholders in sports. It had been argued that psycho-sociological research on the prevalence, knowledge and attitudes of athletes and coaches on doping neglected some important stakeholders like sponsors (Bloodworth, Petroczi, Bailey, *et al.*, 2012; Blank, Furhapter, Leichtfried, *et al.*, 2013). A sponsor is a person or an organization that contributes to the costs incurred in executing a sporting event in return for advertising. In Malawi, reports indicated that a case of doping was discovered when one athlete became a victim during the 2005 International AM Bank Marathon in Kuala Lumpur, Malaysia (Sharman, 2013). However, limited literature within Malawi obscured the knowledge, prevalence and attitude on the use of performance enhancing substances in sports.

Limited involvement of sponsors in anti-doping activities creates a significant gap in the fight against doping in sports including football. Sponsors are a major source of financial and material support for sports and might impose clauses in their sponsorship agreements to demand penalties where athletes are caught doping (Itkonen, Ilmanen & Matilainen, 2009). It has been pointed out that doping among athletes defeats the views of sponsors which regard sports as a tool for developing sensible citizens in society (Keel & Natarajan, 2012). The sports world has witnessed the withdrawal of sponsorship by sponsors for a particular sports programme due to doping scandals among athletes (Harris, 2016; Sorberg, 2010). Although sponsors withdraw sponsorships from sports events or athletes aligned to doping, there is limited literature that shows their involvement in social-psychological studies on doping. In view of this, there was need, therefore, to broaden the scope of responsibility in the fight against doping beyond individual athletes to other groups such as sponsors (Atry, 2013).

It is stated that there were 47 African countries that had National Anti-Doping Agencies aimed at fighting against doping, Malawi being inclusive (Lapouble, 2017). In 2013, the Malawi Anti-Doping Organisation (MADO) was established to fight against doping in sports (United Nations Education, Scientific and Cultural Organisation, 2015). MADO is mandated to independently plan, coordinate, implement and monitor doping issues in sports in Malawi. It is emphasized that education programmes are rolled out for sports personnel, coaches, athletes and sponsors to grasp the consequences of use of performance-enhancing substances (Laure, *et al.*, 2001). The Malawi Anti-Doping Organisation facilitates testing of athletes for doping during competitions and conducts education programmes to sensitize athletes, coaches and sponsors on rules and sanctions against doping, methods of doping, list of prohibited drugs and effects of doping. MADO further facilitated training of medical doctors on doping issues in sports. However, it has been noted that research works on reported prevalence, knowledge and attitude on doping in amateur football are limited not only in Malawi but in Africa (Corluka, *et al.*, 2011).

To prevent or control the use of PES and/or performance enhancing methods (PEMs), athletes, coaches and sponsors should be provided with appropriate information regarding demographic attributes of age, education and experience as they are influential characteristics towards doping in a given population (Corluka, *et al.*, 2011; Muwonge, *et al.*, 2015; Sertibas, *et al.*, 2015). Therefore, this study aimed at unearthing reported prevalence, knowledge and attitude of athletes, coaches and sponsors of football on doping in Malawi.

1.2 Statement of the Problem

The concentration of psycho- sociological studies on knowledge and attitude about doping by athletes and coaches only results in less reduction in doping incidences in sports (WADA, 2012). Reports indicate a global increase in doping by athletes and Africa has an average of 2.4% (Sagoe, *et al.*, 2011; WADA, 2013). Inclusion of sponsors, an entity that may enforce critical clauses to sports sponsorships, required emphasis on the fight against doping (Atry, 2013).

There is limited literature about knowledge and attitude of football athletes, coaches and sponsors on doping in African countries including Malawi (Barghi, Halabchi, Dvorak, *et al.*, 2014). It has been noted that despite football being the most popular sport in the world, few studies have been carried out in Africa, including Malawi regarding knowledge on doping and attitudes and practices among football players (Dvorak, 2006; Corluka, *et al.*, 2011). Limited information on prevalence, knowledge and attitude of amateur football athletes, coaches and sponsors through studies provided a significant gap in the fight against doping in Malawi. This study, therefore, was designed to evaluate the knowledge and attitudes of football athletes, coaches and sponsors on doping in Malawi. Dependent variables of the study included reported prevalence, knowledge and attitude towards doping while independent variables were age, education and experience of football athletes, coaches and sponsors.

1.3 Purpose of the Study

The purpose of the study was to evaluate knowledge and attitudes towards doping by football athletes, coaches and sponsors in Malawi.

1.4 Objectives of the Study

The specific objectives of this study were to:

- a) establish reported prevalence of doping among football athletes in Malawi;
- b) assess the knowledge on doping among athletes, coaches and sponsors in football in Malawi;
- c) establish the attitude towards doping among athletes, coaches and sponsors in football in Malawi;
- d) determine whether there was association between selected demographic factors of football athletes, coaches and sponsors and their knowledge and attitudes towards doping in Malawi;
- e) investigate the relationship between knowledge and attitude towards doping among football athletes, coaches and sponsors in Malawi.

1.5 Hypotheses

The study tested the following hypotheses:

H_{01} : There was no significant difference in knowledge on doping among football athletes, coaches and sponsors in Malawi.

H_{02} : There was no significant difference in attitudes towards doping among football

athletes, coaches and sponsors in Malawi.

Ho₃: There was no significant relationship between knowledge and attitudes towards doping among athletes, coaches and sponsors in amateur football in Malawi.

Ho₄: There was no significant association between age, education and experience of athletes, coaches and sponsors and their knowledge and attitude towards doping in football in Malawi.

1.6 Significance of the Study

The study provides knowledge concerning the psycho-social dimensions of doping which will be useful in the fight against performance enhancing substances in Malawi. The Ministry of Sports in Malawi, through the findings of this study, should be able to initiate and enforce policies that promote doping-free sports. MADO might be encouraged to enforce anti-doping programmes which reach sports enthusiasts, athletes, coaches and sponsors. The football coaches and managers might guard athletes against doping through counselling and guidance. This study might enable football sponsors to attach anti-doping conditions to their sponsorships. The findings of the study form the benchmark for further research on doping in Malawi and beyond.

1.7 Delimitations of the Study

Participants in the study were recruited from football athletes, coaches and sponsors participating in the Super League football of Malawi. These were targeted because they were traceable since they were registered with the Football Association of Malawi and were assumed to have knowledge on the use of performance enhancing substances. Also,

they took part in the highly rated football competitions in Malawi. Important factors such as secrecy, culture, religion and black markets which influence the practice of doping in amateur football were not addressed and did not affect the findings. Data for this study was collected using questionnaires from respondents who were in different geographical locations.

1.8 Limitations of the Study

The study involved only football clubs from Blantyre and Lilongwe cities as these enabled the researcher to find participants during training sessions and official working hours. Team managers and physicians of the identified football clubs were not involved as they were not part of targeted population in the study. The football athletes had difficulties responding to the questionnaire because of implied criminal connotations towards the subject. However, the researcher assured the participants, athletes in particular, of confidentiality of the information provided by them during the study and that the undertaking was strictly for academic purposes.

1.9 Assumptions of the Study

In this study, it was assumed that Malawi athletes, coaches and sponsors had legitimate knowledge of the list of banned substances, sources of relevant information and consequences of doping. It was also assumed that athletes, coaches and sponsors had formed attitudes towards use of performance enhancing substances. It was further assumed that there was a positive relationship between knowledge and attitudes towards doping in football in Malawi. It was assumed that demographic attributes of football

athletes had an influence on reported prevalence, knowledge and attitude towards doping. It was also assumed that participants would cooperate and give honest responses to the items in the questionnaire.

1.10 Theoretical Framework

Several theories have been used to study the use of performance enhancing substances among athletes. Jalilian, Allahverdipour, Moeini, *et al.*, (2011) used the Planned Behaviour Theory (Ajzen&Fishbein, 1988) to determine knowledge of side effects of use of Anabolic Androgenic Steroids (AAS) among gymnastic athletes. This was based on the fact that attitude is the strongest factor to determine the behaviour of doping among athletes in sports. The Drug Deterrence Theory (Strelan&Boeckmann, 2003) which indicates that a decision to use performance enhancing substances by athletes is determined by criminology, costs, and benefits and the environment is also used. Self Determination Theory (Deci & Ryan, 1991) is another theory that has been used in the studies on doping and it indicates that change in levels of external and autonomous regulation results in human behaviour (Johnson, Sacks & Edmonds, 2010). Furthermore, the Drug Compliance Model in Sports (Donavan, Egger & Kapernickl, 2002) has been used in some of the performance enhancing studies (Chebet, 2014). The Drug Compliance Model predicts that where fear of the effects is higher, knowledge of benefits is poor, where personal morals are against doping, knowledge is high and where reference group opposes use of drugs, the likelihood of doping becomes low.

This study was guided by the conceptual framework derived from the Drug Compliance

Model (Figure 1) as it centred on the capacity of athletes, coaches and sponsors.

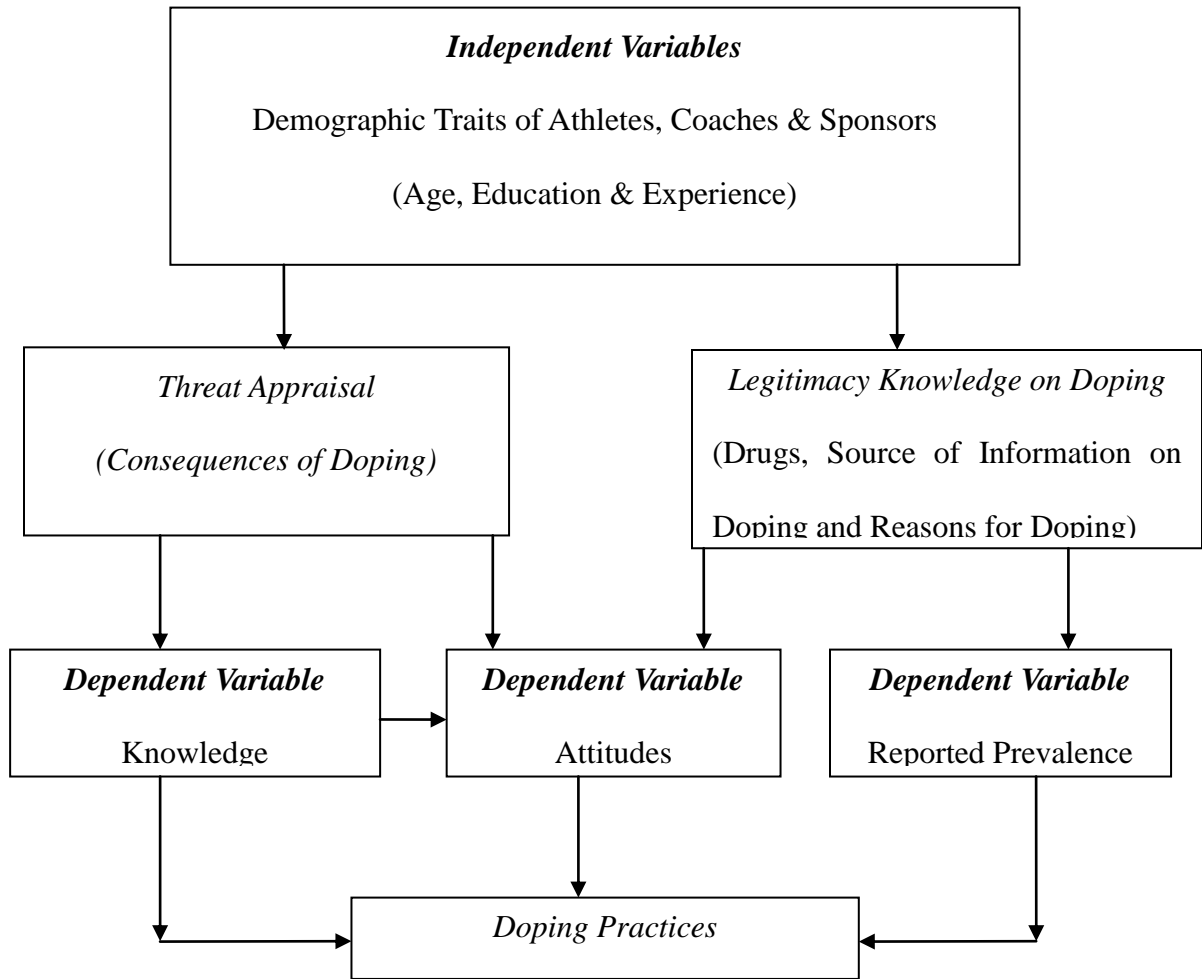


Figure 1: Conceptual Framework of the Study

(Derived from Donava, *et al.*, 2002)

The first capacity of athletes, coaches and sponsors was based on the legitimacy knowledge on doping which included banned substances, tests and sources of information. The second capacity was based on threats that included consequences of the use of banned substances. Finally, it was based on personal morals that guide perceptions and attitude on doping by athletes, coaches, sponsors and other stakeholders in amateur

football in Malawi. The conceptual framework intended to facilitate adherence to regulations and rules regarding use of performance enhancing substances.

The model was modified to suit variables which the study intended to evaluate. In this case, independent variables included demographic characteristics (age, education and experience) of football athletes, coaches and sponsors. The dependent variables included reported prevalence, knowledge and attitudes on doping. The model had six parts that influenced knowledge and attitudes and included legitimate knowledge of doping, threat appraisal, benefit appraisal, demographic factors, personal morals and reference group (Donavan, *et al.*, 2002). Since the purpose of this study was to evaluate reported prevalence of doping, knowledge and attitudes of athletes, coaches and sponsors on doping, variables of personal morality and referenced groups were not studied.

In line with the levels of the model, this study first established reported prevalence of doping among amateur football athletes. Secondly, it assessed the knowledge and its sources of amateur football athletes, coaches and sponsors on doping and names of doping substances. The association between knowledge on doping and demographic factors (age, education and experience) of football athletes, coaches and sponsors were also assessed. Finally, the relationship between knowledge and attitude of football athletes, coaches and sponsors on doping were examined.

CHAPTER TWO: LITERATURE REVIEW

2.1 Prevalence of Doping

It is difficult to define the term ‘prevalence’ in the realms of doping in sports. Hon, *et al.*, (2014) defined prevalence as cases of identified users of performance enhancing substances among specified elite athletes at a given point in time. In this study, prevalence can be taken as a proportion of athletes who reported having tested or used performance enhancing substances and related methods in sports including football. It had been observed that variations exist in the prevalence of doping based on the type of sport, level of competition, gender of athletes and geographical location and techniques for collecting data for studies (Pitsch & Emrich, 2012).

Based on the assumption of tested samples per year, it was generally estimated that the global prevalence of doping among athletes was at 1-2% with football being at 0.45% (Mottram, 2005; Dvorak, *et al.*, 2006; Hon, *et al.*, 2014) and with variations attributed to geographical location, frequency of studies and parameters in focus (Castillo & Comstock, 2007). Using cross sectional surveys, researchers were also able to evaluate the prevalence of use of performance enhancing substances (Weaving & Teetze, 2014; Jabari, Al-shehri, *et al.*, 2015). For example, in the United States of America, prevalence of doping in sports was at 4.5 % (Heltsley, Shelby, Crouch, *et al.*, 2012) while in Canada, it was found that 13% of football athletes doped (Weaving & Teetze, 2014). Bents, Tokish and Goldenberg (2004) argued that the number of athletes who dope in Europe could be slightly higher as was the case in Turkey (8%) and Switzerland (2.5%).

In Asia, Kargarfad, Shariat, Lam., *et al.*, (2015) showed that the prevalence of doping among Iranian University athletes was at 8%, whereas AlGhobain, Konbaz, Almassad, *et al.*, (2016) indicated that the prevalence of doping in Saudi Arabia, was at 4.3 %. In Africa, it was found that the prevalence of doping among South African high school athletes was at 30% (Gradidge, Coopoo & Constantinou, 2011) while in Kenya and Uganda it was around 3.9% and 4% respectively (Chebet 2014; Muwoge, *et al.*, 2015). In Ghana, the prevalence of doping among footballers was at 3.8% (Sagoe, *et al.*, 2014).

In football, the global prevalence of doping was found to be as low as 0.45% with a yearly range of 0.12%, to 0.20% from 2006 to 2014 (Dvorak, *et al.*, 2006; www.fifa.com). In the English Premier League, it was found that there were rare possibilities for football athletes to dope despite them relying only on food supplements which could also contain prohibited substances (Waddington, Malcolm & Naik, 2004). In the Italian Football League Series A, a test on 36 samples of footballers aged between 20 and 30 years found out that 5 athletes had used the banned substance of nandrolone (Somavilla, Gambelunghe & Rossi, 2002). Meta-analysis of data on use of performance enhancing substances in Italy revealed that 3% of tested athletes which included footballers between 2003 and 2016 were doped and these were young athletes, less than older athletes (Mazzeo, Monda, Messina, *et al.*, 2016).

Malawi, being a signatory to International Anti-Doping Pact, used to send blood samples of athletes to the defunct accredited South African laboratories for testing (Kaminjolo, 2014). The advent of such information might have projected that there could be prevalence of doping in Malawi which needed assessment. However, literature was

limited regarding the studies conducted in Malawi in relation to prevalence, knowledge and attitude towards the use of performance enhancing substances among football athletes, coaches and sponsors. It has been indicated that the prevalence of doping could be accessed through a combination of the results of models of tested samples for doping and questionnaires utilizing randomised response technique among athletes in sports (Hon, *et al.*, 2014). Thus, the prevalence of performance enhancing substances could be ascertained through testing of samples of urine or blood of the targeted group of athletes or analysis of the records from the testing laboratories. This study, however, intended to establish reported prevalence of doping through the self-reported questionnaires administered to athletes, coaches and sponsors as was the case in Uganda by Muwoge, *et al.*, (2015) and Ghana (Sagoe, *et al.*, 2014).

2.2 Knowledge of Athletes, Coaches and Sponsors on Doping

Knowledge in this study refers to a condition of knowing the use of performance enhancing substances or related methods in sports with familiarity gained through experience or association. It has been indicated that knowledge of participants on issues including doping could be accessed through collection of both qualitative and quantitative data in the descriptive cross-sectional and exploratory research designs (Memon, Shaikh, Fahim, *et al.*, 2015). These designs could help a researcher to obtain information from the subset of the population at a point in time and the available basic details and insights about the problem under study. In Canada, it was found out that triathlon athletes had knowledge on doping with sports organizations and media as major

sources of information (Johnson, Butryn & Masucci, 2013). A study in Ghana revealed that 88% of a team of national amateur athletes of whom 51.5% were footballers had knowledge of banned drugs by WADA with magazines and televisions as the principle source of the knowledge (Brown, Poreko & Eliason, 2013). On the contrary, Ama, Betnga, Moor, *et al.*, (2003) in their study of knowledge and attitude towards doping found that 54% of footballers in Cameroon had little knowledge about doping. Equally, a study in Turkey found out that athletes had little knowledge on doping (Sertbaş, Akdeniz, Yilmaz, *et al.*, 2015) as was the case in Iran, where athletes had poor knowledge on names of banned drugs on the World Anti-Doping Agency prohibited list (Barghi, *et al.*, 2015). However, the aforementioned studies did not specifically target football athletes, coaches and sponsors.

A study conducted by Blank, *et al.*, (2014) found out that coaches in Australia had knowledge on doping and the sources of information included secondary school education curriculum and seminars. Similarly, Fung (2006) revealed that, in Hong Kong, community coaches of sports including football had knowledge on doping. However, in Iraq, Barghi, *et al.*, (2015) found out that 60% of football coaches had poor knowledge on doping due to the belief that no human urine contains doping substances and food supplements could not assist athletes to improve performance. Similarly, Engelberg, Moston and Blank, (2017) found out that the knowledge of coaches on biological passports of athletes in doping was very poor and that these coaches rarely discussed doping issues with athletes. It had been argued that the profound knowledge of a coach on doping could influence him or her to be ethically upright against doping, a situation

that would see athletes respect the coach's instruction against doping (Blank, *et al.*, 2013). It should be emphasized that coaches must act exemplary to athletes and this can only happen where sound knowledge is available with regard to doping. Engelberg, (2017) reported that despite coaches knowing athletes who used performance enhancing drugs, they did not know that they would be tested. With reference to the mentioned studies, it could be deduced that there were various sources of knowledge for athletes and coaches. However, it could not be assumed that all football athletes and coaches had equal knowledge on doping as the studies did not cover all countries, let alone Malawi.

It has been demonstrated that sponsors have knowledge on doping of athletes, assistant sport personnel and other organizers through scandals, including doping in sports (Solberg, *et al.*, 2010). For example, it was reported that sponsors warned of the serious repercussions against athletes and other stakeholders who would be involved in doping after the Festina Scandal where cyclists used performance enhancing substances (Vest Christiansen, 2005). Where doping scandals exist, both the sport and sponsors become consequently affected. Reports indicate that sponsors experience negative repercussions in the sense that consumers slowly stop to procure the services of the company sponsoring the sports team, or athletes involved in doping practice as attitude change towards a particular product (Florez, 2013). Due to this effect, sponsors administratively disassociate themselves from athletes or teams embroiled in doping scenarios so that customers cannot strongly link their service or product to the scandal (Roehm & Tybout, 2006) and to avoid condoning the doping behaviour (Messner & Reinhard, 2012). The withdrawal of Phonak from supporting cycling due to issues of doping among cyclists

and their leader emanated from the knowledge that was available to the sponsor (Buechel, Emrich & Pohlkamp, 2014). However, the knowledge on doping by sponsors emerged through publicity from newspapers, radio, broadcast and televisions, where there was no systematic arrangement in form of research. This study intended to establish the knowledge of sponsors on doping in amateur football in Malawi through systematic and scholarly procedure.

2.2.1 Performance Enhancing Substances

Doping can be defined as the use of drugs or other substances for performance enhancement in sports (Reardon & Creado, 2014). In fact, some of the substances administered to patients by medical personnel appear on the list of banned substances by World Anti-Doping Agency (WADA). Examples of the conditions which require the use of the substances that double as medicine include hypertension (Niebauer, Rjesson, *et al.*, 2018). In view of this, it is recommended that athletes should know the drugs on the new list of banned substances and methods by WADA prior to commencing the treatment.

‘Growth Hormones’ are one of the drugs existing on the illicit drugs existing on the list by WADA. It has been indicated that ‘Growth Hormones’ increase masses of the muscles, extracellular fluid, anaerobic exercise capacity of the muscles of athletes by enhancing carrying capacity of oxygen cells and reduce trembling of antagonistic muscles of sprinting athletes (Ip, Barnett, Tenerowicz, *et al.*, 2012). Athletes use ‘Growth Hormones’ in order to increase physical performance, tolerance for hard training, to shorten the period of recovery after exercise and soft tissue injuries and to stimulate the

formation of tendons (Sharp, 2009).

beta-blockers as illicit drugs are defined as a group of drugs which perform to interfere with the influence of the sympathetic nervous system in the body (Patston & Loughlan, 2014). The use of β -blockers reduce the maximum level of physical exercise, rate of resting during metabolic processes and can result in death, where it disturbs chronotropic response to exercise stress testing in a particular person (Ková, Klugar, Sovová *et al.*, 2016). It is reported that beta-blockers are commonly used to reduce hand trembling, heart-rate and blood pressure and sedate the person using them, including athletes (Patston & Loughlan, 2014). Hence athletes who use beta blockers acquire artificial body conditions while participating in sports activities. They therefore remove the notions of naturalism and fair play in sports.

Androgenic Anabolic Steroids (AAS) are another banned substance which provides unlevelled ground in sports by assisting the development and strengthening of muscles in athletes within a short period of time. AAS, in combination with Growth Hormones, Diuretics and through stacking are the mostly used by athletes in order to strengthen the fat and water loss, to improve exercise performance and to inhibit the negative effects of androgens. A recent meta-analysis of 187 studies established that there was a 3.3% global lifetime prevalence of use of doping substances among athletes with males (6.4%) as higher users than females (1.6%) of the Anabolic Steroids (Sagoe, *et al.*, 2014).

It has been argued that extensive use of drinks such as energy drinks and medications (that include anti-inflammatory drugs or thyroid hormones), or performance enhancing

substances (such as anabolic steroids) are some of the underrated causes of second group hypertension. A study in Syria found that 60% of pharmacy students identified energy drinks among amino acids and vitamins as doping substances (El-Hammadi & Hunien 2013). Despite the inclusion of energy drinks as one of the causes of secondary hypertension in human beings, the WADA list ignores its existence, together with vitamins and amino acids, as the performance enhancing substance (WADA, 2013). It is argued that beverages, including energy drinks include stimulants such as caffeine and amino acids, which WADA has not included on the list of illicit drugs (Higgins, Tuttle & Higgins, 2010). It can be observed from the above discussion that quantities of the stimulants in energy drinks and food supplements may constitute them as performance enhancing substances. There is a need, therefore, for football athletes, coaches and sponsors to demonstrate their knowledge and attitude towards doping substances.

It is indicated that athletes such as cyclists, short distance runners and weight lifters are some of the most notable groups that have been entangled in the use of prohibited substances like stimulants (cocaine, amphetamines fenfluramine, sele-giline and heroine) and related methods to enhance performance (Afolayani & Adegboyega, 2012). Studies have shown that stimulants promote alertness, reduce tiredness, weight, anaerobic performance and fatigue and are used by athletes for endurance and strength (Afolayani & Adegboyega, 2012; Higgins, Tuttle & Higgins, 2010).

A study conducted in Syria exploring knowledge, attitude and abuse of performance enhancing substances found out that most pharmaceutical students failed to identify

narcotics and diuretics as doping drugs in sports (El-Hammadi & Hunien, 2013). Diuretics and other doping agents, including narcotics and β -blockers have less doping power when taken by athletes. Diuretics reduce weight and anxiety of athletes, accelerate excretion of sodium aiming at changing composition of body fluids and mask the availability of banned agents during the test through increased urination by users (Cadwallader, Torre, & Botrè, *et al.*, 2012; Nikolopoulos, Spiliopoulou & Theocharis, 2011). Narcotics are used by athletes to reduce pain during training or competition (Reardon & Creado, 2014). Consequently, there are various views about performance enhancing drugs used by athletes in sports, including football. This study, therefore, intended to assess knowledge of football athletes, coaches and sponsors on doping substances regarding Growth Hormones, diuretics, stimulants, β - blockers, narcotics, energy drinks, amino acids, anabolic steroids and vitamins in Malawian context.

2.2.2 Reasons for Doping by Athletes

Several reasons emerge for athletes to indulge in the use of performance enhancing substances. Ozdemir, Nur, Bagcivan, *et al.*, (2005) found out that in Turkey, athletes used doping substances for quick recovery from injuries. Elsewhere, Parnabas, Mahamood, Parnabas, *et al.*, (2013) envisaged that athletes doped in order to win the competition, to gain finances as well as favours and to attain social status in the community. Angell, Chester, Sculthorpe, *et al.*, (2012) asserted that improving performance in sports is another reason for the use of performance enhancing drugs by athletes. A study by Tangen and Breivik, (2001) indicated that athletes use performance enhancing substances in order to increase self-confidence and social recognition among themselves. Malik, and

Meenu (2016) argue that desire to relax, the belief that others are doping, influence of others, motivation, lack of social support, desire to please coaches, parents and the public as well as media, influence athletes to dope.

Perfectionism among coaches also influences athletes to use performance enhancing substances. Bae, Yoon, Kang, *et al.*, (2017) found out that the need to perfect performance as required by coaches influenced Korean athletes participating in the Rio 2016 Olympic Games have a friendly attitude towards doping. Sanchez, March and Zabala (2013) found out that Spanish cyclists considered sports achievements, external pressure and conditions of contract by sponsors as reasons for athletes to use performance enhancing drugs. Mitic and Radovanovic (2011) highlighted that individual's moral values and role models of an athlete determine the use of performance enhancing drugs in sports, including football. Scholars have added that female athletes dope to change their physical appearance (Barhrke & Yesalis, 2004) because they regarded a gain in body weight as shameful in the surrounding community (Deligiannis, Hans, Carre, *et al.*, 2006). It has been reported that the need to win a competition prompted the Malawian athletes who failed doping tests in Malaysia (Sharman, 2013). This created the need to specifically establish more reasons that might influence athletes to dope in Malawi.

2.2.3 Health Consequences of Doping

Doping substances have numerous negative health consequences for athletes (Bird, Goebel, Burke, *et al.*, 2015). Studies indicate that hypertension, heart failure and sudden cardiac arrest (Deligiannis, *et al.*, 2006), illusions and hallucinations were some of the

health detriments of doping in athletes (Jovanovic & Radovanovic, 2001). Hartgens and Kuipers (2004) added that the use of PEDs lowered spermatogenesis in male athletes while Sparre (2008) pointed out that in East Germany doping female athletes experienced pregnancy miscarriages and stillbirths. Athletes using AAS also develop small testicles, reduced number of sperms, dead sperms, slow propelled sperms, prostate conditions in males and gynaecomatistia condition in females (Kanayama, Hudson, & Pope, 2010).

It has been argued that the use of Anabolic Androgenic Steroids results in thrombosis, reduced glucose tolerance and malfunctioning of the vital human organs such as the liver and the heart (Lippi, & Banfi, 2011). Human Growth Hormones challenge the athletes using them with impaired bone growth, disorderly eating pattern, hypoglycemic diabetes, colon, breast and prostate cancers, headache and hypertension among others. (Lindqvist, Moberg, & Ehrnborg, 2014). Diuretics as a catalyst for production of excessive urine provides athletes with the risk of high loss of water and mineral salts such as potassium, calcium and sodium through dehydration processes (Bird, *et al.*, 2015). Based on the literature, trends of health consequences of use of performance enhancing substances on athletes may differ by region and sport. This study sought to establish more health consequences of doping from athletes, coaches and sponsors in Malawian football.

2.2.4 Social Consequences of Doping

Studies indicated that the use of performance enhancing substances results in social problems in athletes such as disrupted relationships (Skarberg & Engstrom, 2007; Bird, *et al.*, 2015). Rohman, (2009) indicated that armed crimes and anti-social tendencies are

common among athletes who dope. It was argued that performance tainted with doping scenarios breached the rules and ethics which promote integrity, true spirit of natural sportsmanship, fairness, safety and entertainment in sports (Kaur, *et al.*, 2014). Buechel, Emrich, and Pohlkamp (2014) stated that use of performance enhancing substances lowers the interest of patrons to attend to the sport event of the involved sport code.

Research surveys have provided evidence that use of performance enhancing substances goes against the spirit of sport, naturalism and altruism and has damaging consequences on the reputation of sports (Solberg, Hanstad & Thoring, 2010). Challenges arise where some stakeholders such as sports administrators, spectators and sponsors are not involved in the surveys on sports events such as doping (Engelberg, Moston & Skinner, 2012). In view of this, this study intended to involve sponsors together with amateur football athletes and coaches in evaluating reported prevalence, knowledge and attitude towards doping in Malawi football.

2.2.5 Economic Consequences of Doping

Sponsorship influences sports events because sponsors recognize the importance of associating with popular activities like football (Walvaren, 2013; Trachler, Degaris & Dodds, 2015). Such associations could provide a good image of the sponsor to the customers of the specific sport. It was argued that the conduct of athletes limited sponsors' expenditure (Itkonen, *et al.*, 2009; Florez, 2013) on sports sponsorships and marketing of particular endorsed products (Keel & Nataraajan (2012) being linked to doping cases. In Australia, Danylchuk, *et al.*, (2016) revealed that doping had no impact

on marketing of brands by sponsors because most consumers did not associate issues of doping with the concerned brand.

On the contrary, in cycling, the world witnessed the withdrawal of support by sponsors and television broadcasts over doping scandals during the 2009 Tour De Germany (Solberg, 2010). In addition to that, Nestle withdrew sponsorship towards kids' athletics programme covering 76 countries in order to protect their image from the doping scandals in IAAF (Harris, 2016). Similarly, not pleased with doping scandals by Russian and other athletes at the World Athletics Championships, Adidas pulled out its sponsorship towards IAAF (Justice, 2016). However, Kansu and Mamuti (2013) argue that sports provide a universal language that tightly connects members of the society with their sports teams and athletes. In the 2014 and 2015 Malawi top football league, Football Association of Malawi in conjunction with Telecom Networks Malawi, as a sponsor of Malawi Super League Football, agreed to introduce a clause in its rules (Football Association of Malawi shall be liable to carry out doping tests at any time and sanctions for contraventions of doping regulations shall be followed in accordance with FIFA regulations) that would punish doping athletes (2014 Carlsberg Malawi Cup Rules & Regulations). The inclusion of the clause against doping in the top football league brought in a convenient environment for football sponsors to reveal their knowledge and attitude on the use of performance enhancing substances among football athletes.

2.3 Attitudes of Athletes, Coaches and Sponsors towards Doping

'Attitude' can be defined as an individual's positive or negative evaluation of using the

performance enhancing substances in football. Attitudes of athletes and coaches are usually assessed using the performance enhancing attitude scale (PEAS) (Blank, *et al.*, 2013; Chebet, 2014; Muwoge, *et al.*, 2015; Tahiraj, *et al.*, 2016). In Spain, a study revealed that Sports Science University footballers showed negative attitudes towards doping (Sanchez, Cruz, March, *et al.*, 2013). Barghi, *et al.*, (2015) found out that in Iran, coaches had negative attitudes towards doping. In Hong Kong, it was revealed that sports coaches, including football coaches, did not condone the use of PES (Fung, 2006). Similar trends of attitudes among coaches towards doping were found in Canada (Johnson, *et al.*, 2013).

In Africa, studies found out that 82.3% of athletes in Kenya had negative attitudes towards doping (Chebet, 2014) while in Ghana 81.8% of athletes, including footballers, thought that an athlete could become a champion without using PES (Brown, *et al.*, 2013). In South Africa, doping was considered as morally wrong and deserved no tolerance (Nolte, *et al.*, 2014). In Uganda, coaches agreed to anti-doping activities in sports (Sanchez, *et al.*, 2015). Scholars have argued that the direction of attitude in athletes towards doping was dependent on factors such as knowledge (Horcajo & Vega, 2014) and problems accompanied by sanctions imposed on doping athletes (Overbye, Elbe, Knudsen, *et al.*, 2015).

Doping scandals in sports, including football, are said to be some of the elements that bring bad reputation against sponsors associated with the sports teams, individual athletes and events involved in such illegal practices (Chien, Kelly & Weeks, 2016). Sponsors, however, portray the attitudes towards doping in different ways. Some sponsors, though

having a negative attitude towards doping practices, act in such a way that their reaction is not conspicuous to the general public (Messner & Reinhard, 2012). For example, despite the promise by the sponsor to act gruesomely in the Festina doping scandal, the sponsorship continued with the cycling team in question (Solberg 2010). Contrary to this scenario, in 2016, ADIDAS discontinued sponsoring International Athletics Association Federation due to the emerging reports of doping by Russian athletes (Daly & Roan, 2016). The two fore stated scenarios demonstrated that the former sponsors had a moderate attitude towards doping while the latter had negative attitude towards the use of performance enhancing substances. It has been highlighted that in recent years, sponsors have inserted clauses on the moral conduct of athletes, managers, supporters, physicians and coaches in their sponsorship contracts that act against doping (Moore, 2016). This study, therefore, sets to determine the attitude of sponsors towards doping in football in Malawi.

2.4 Age, Education and Experience on Knowledge and Attitude on Doping

2.4.1 Age, Knowledge and Attitude on Doping

Knowledge and attitude in doping are a function of age of athletes, coaches and sponsors in sports. It is the norm that older people, in this case, athletes, coaches and sponsors, would have more knowledge and attitude on doping than the rest of Malawi football. Sekulic, Tahiraj, Zvan, *et al.*, (2016) argued that sports achievements at senior levels are highly safeguarded against the use of performance enhancing drugs. Psouni, Zourbanos and Theodorakis, (2015) found out that in Italy, young coaches in sports were likely to be

open in promoting chances for athletes to use performance enhancing substances. Football in Malawi is comprised of young athletes because coaches select football players so that they can be retained in the system for a long period of time. In Kenya, Chebet (2014) found out that age played a role in the differences of knowledge on doping in athletes with young athletes having less knowledge on doping issues than older ones. Chebet (2014) attributed the scenario to the fact that young athletes were at primary school level of education. A study by Kamenju, Mwisukha, Rintaugu, *et al.*, (2014) in East and Central Provinces of Kenya found out that there was no significant difference in attitude among college athletes towards doping based on their age.

Blank *et al.*, (2014) reported that age of coaches was significantly associated with knowledge on doping in Australia. The trend of association seems similar to that of athletes where old coaches were expected to have more knowledge on doping than young ones. It is not known whether respective ages of football coaches in Malawi were associated with their knowledge on doping or not. In terms of attitude, Psouni, *et al.*, (2015) found out that there was a significant association between age of coaches and choices of intention to allow athletes dope given the chance, with young athletes being more willing than old coaches. This is a worrisome trend since young coaches need to be at the top in the fight against doping as they have a long way in their coaching careers. Parents as well as coaches of athletes have been identified as influential in building doping attitudes in sports codes including football (Blank, *et al.*, 2014). This study sought to establish the influence of age of athletes, coaches and sponsors on knowledge and attitudes on the use of performance enhancing substances in Malawi.

2.4.2 Education, Knowledge and Attitude on Doping

Education of particular sports personnel is considered as a tool for knowledge and attitude towards doping. It is expected that as one gets highly educated, he/she must have high knowledge on doping issues. In a study by Laure, Bensinger and Lecerf (2003), formal education status of practising doctors was not necessary for improvement in knowledge and attitude of doping in French sports. A study done in Kosovo recommended that where knowledge of doping is low among athletes and members of the society, there is a need to consider a systematic education system as a tool for disseminating information on the same (Sekulic, *et al.*, 2016). Sekulic, *et al.* (2016) argued that athletes who possess good knowledge on sports nutrition have a low tendency for doping behaviour and also have a negative attitude towards the same. Consequently, good attitude of coaches towards anti-doping inspires and strengthens understanding and compliance of athletes to doping rules in sports (Maznov, 2013). A study by Psouni, *et al.*, (2015) indicated that there was no statistical significance between the education of coaches and attitude towards intention to allow athletes to use performance enhancing substances. Similarly, Blank *et al.*, (2014) reported that there was no significant association between demographic features of the coaches and attitude towards doping. These findings could not rule out the possibility of having some coaches favouring intentions by their athletes to dope in football. This study intended to find out knowledge and attitude of athletes, coaches and sponsors on doping with regard to their status of education.

2.4.3 Experience, Knowledge and Attitude on Doping

Experience can be defined as length of the period an athlete, a coach or sponsors have been playing, coaching and sponsoring football related activities. In Turkey and Bosnia, studies revealed that experience and ethnicity determined knowledge on doping among athletes and coaches (Corluka, *et al.*, 2011) while Perry, Lund and Deninger (2005) indicated sports discipline as a determinant of doping among athletes. It was found out that athlete support personnel who worked for more than 15 years among elite sporting athletes had higher knowledge of doping and negative attitude towards the same in sports (Mazanov, Backhouse, Connor, *et al.*, 2013). This was also the situation in Kenya, where athletes with less experience had poor knowledge of doping (Chebet, 2014). Humphreys (2007) argued that young athletes were more likely to dope in sports than older experienced athletes. Seculic, *et al.*, (2014) reported that athletes with less number of years of experience, among other factors, in Rugby were likely to indulge in doping behaviour. Similarly, Blank *et al.*, (2014) found out that experience of coaching had a significant association with knowledge and attitude on the use of performance enhancing substances. It was reported further that in Kenya, experience of participation in sports competition did not provide significant difference of knowledge and attitude towards doping among Teachers Colleges athletes (Kamenju, Mwisukha, Rintaugu, *et al.*, 2016).

2.5 Summary of Reviewed Literature

Literature showed that the lifetime global prevalence of doping is at 1-2 % in sports and in football alone is at 0.45% (Dvorak, *et al.*, 2006; Hon, *et al.*, 2014). Sagoe, *et al.*, 2014 added that the prevalence of the use of performance enhancing substances in Africa from

the 1970s to 2013 was at 2.4%. Reports indicated that a Malawian athlete failed doping test while participating in a marathon in Malaysia (Sharman, 2013) and this entailed a possible occurrence of the use of performance enhancing substances among athletes in Malawi which needed investigation. Niebauer, Rjesson, *et al.*, (2018) warned athletes to be aware of the list of banned substances by WADA before using them for food and medicine. The performance enhancing substances include Growth Hormone, Anabolic androgenic steroids, diuretics, β -blockers, stimulants and narcotics (Ip, Barnett, Tenerowicz, *et al.*, 2012; Patston & Loughlan, 2014; Kova, Klugar, Sovova, *et al.*, 2016). Higgins, Tuttle and Higgins (2010) argued that beverages like energy drinks contain caffeine which is a performance enhancing substance. This study, therefore, assessed knowledge of football athletes, coaches and sponsors on growth hormones, diuretics, stimulants, β -blockers, narcotics, energy drinks, amino acids, anabolic steroids and vitamins as doping substances in Malawi.

The literature demonstrated various studies on knowledge, prevalence and attitude on doping (Blank, *et al.*, 2013; Chebet 2014). Barghi, *et al.*, (2015) established knowledge, practices and attitudes of Iranian footballs towards doping. Sanchez, Cruz, March, *et al.*, (2013) did similar studies among Spanish football athletes. In Africa, Brwon, *et al.*, (2013) assessed knowledge, perceptions, and attitudes of athletes on doping in tertiary institutions in Ghana while Muwonge, *et al.*, (2015) did similar study on professional Ugandan athletes. Gradidge (2011) investigated the prevalence of doping substances among high school male athletes in South Africa. Ama, *et al.*, (2003) investigated use and awareness of banned and unbanned substances by amateur footballers in Cameroon.

The general trend of the results of these studies was that athletes and coaches had knowledge and negative attitudes towards doping (Gradidge, 2011; Brwon, *et al.*, 2013; Muwonge *et al.*, 2015).

Sponsors in recent years also have knowledge and attitudes towards doping (Solberg, 2010; Messner & Reinhard, 2012; Moore, 2016). These have influenced them to withdraw sponsorship of sports and athletes involved in doping scandals (Solberg 2010; Daly & Roan, 2016). The reports on knowledge and attitude of sponsors towards doping were based on broadcasts and newspapers. The few studies conducted in African countries were limited to Malawi (Ama, *et al.*, 2003; Gradidge, 2011; Muwoqe, *et al.*, 2015; Chebet 2014; Sagoe, *et al.*, 2014) and did not include stakeholders like sponsors. Also, these studies revealed differences in knowledge, prevalence and attitudes towards the use of performance enhancing substances by respondents. This study combined football sponsors to athletes and coaches in determining their respective knowledge and attitude towards doping in Malawi.

Studies showed that sports organizations and the media in Canada (Johnson, Butryn & Masucci, 2013) and secondary school education curriculum and seminars in Australia (Blank, *et al.*, 2014) were sources of information on doping. In Ghana, Brown, Poreko & Eliason (2013) found magazines and televisions whereas in Uganda and Kenya, Chebet (2014) and Muwonge, *et al.*, (2015) indicated that coaches, team doctors, and friends were sources of information on doping. Sponsors elsewhere relied on newspapers and radio as sources of information on doping in sports (Vest Christiansen, 2005; Roehm & Tybout, 2006; Messner & Reinhard, 2012). Literature showed the existence of variations

in the sources of information on doping by athletes and coaches which required further investigation in Malawi.

Ozdemir, Nur, Bagcivan, *et al.*, (2005) indicated that athletes doped for quick recovery from injuries. Parnabas, Mahamood, Parnabas, *et al.*, (2013) argued that athletes doped in order to win the competition, to gain finances, to increase self-confidence and to attain social status in the community. Angell, Chester, Sculthorpe, *et al.*, (2012) explained that athletes doped to improve performance. Malik and Meenu (2016) indicated that athletes doped with a desire to relax. Bae, Yoon, Kang, *et al.*, (2017) stated that athletes used enhancing substances to perfect performance. Reports indicated that a Malawian athlete used performance enhancing substances in an attempt to win the competition in Malaysia (Sharman, 2013). Consequences on athletes, sports industry and sponsorship outweighed the reasons for doping presented by the athletes (Solberg, 2010; Angell, *et al.*, 2012; Kaur, *et al.*, 2014; Harris, 2016). Consequently, the fight against doping involved several organisations, including the MADO (WADA, 2012; UNESCO, 2015). Bird, *et al.*, (2015) stated that the consequences of performance enhancing substances included social problems such as armed crimes and disrupted relationships. Itkonen, *et al.*, (2009) indicated that the economic consequences of doping included discontinuity of sponsorship of sports activities such as football. Angell, *et al.*, (2012) presented side health effects such as still births in women. Kaur, *et al.*, (2014) indicated administrative sanctions against athletes who tested positive were consequences of doping.

Literature indicated that experience influenced knowledge, the prevalence and attitude towards doping (Corluka, *et al.*, 2011; Mazanov, Backhouse, Connor, *et al.*, 2013;

Seculic, *et al.*, 2014). Age and level of education determined knowledge, prevalence, and attitudes towards doping among athletes and coaches (Blank *et al.*, 2014; Psouni, *et al.*, 2015). Differences in demographic factors of respondents meant differences in associations with their knowledge, prevalence and attitude towards doping. This study was set out to establish the association between demographic factors of athletes, coaches and sponsors and their knowledge and attitude towards doping in Malawi.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

This study used a descriptive cross-sectional survey design (Olsen & St. George, 2004). Under this design, the researcher was able to collect data using questionnaires from either the entire or subset of the population and within a given period of two months (Kesmodel, 2018). This design enabled the participants to be sampled randomly and purposively. The design was suitable for this study as it enabled the researcher to assess prevalence of doping, knowledge and attitudes on doping from a subset of the population of football athletes, coaches and sponsors (Kesmodel, 2018) in cities of Blantyre and Lilongwe. The cross-sectional survey design enabled the researcher to compare responses of athletes, coaches and sponsors over the same dependent variables.

3.2 Research Variables

In this study, dependent variables included reported prevalence of doping, knowledge and attitudes on doping while demographic attributes of age, experience and education level of football athletes, coaches and sponsors were independent variables. Hence, variables of education level were measured at nominal scale while experience and age were measured on ordinal scale. Reported prevalence, knowledge and attitude were measured on an interval scale. Both dependent and independent variables were converted into composite scores to continuous variables for ease of analysis.

3.3 Location of the Study

The study was conducted in the cities of Blantyre and Lilongwe in Malawi. Malawi is located in the South East of Africa, 13⁰ 30 S, 34⁰ 00 South of Tanzania, East of Zambia and North West of Mozambique with Blantyre and Lilongwe as her commercial and capital cities respectively. The cities were chosen because this was where the majority of football athletes, coaches and sponsors were located due to the presence of industrial economic activities (Zulu, Ciera, Musila, *et al.*, 2012) (Appendix 4). Blantyre and Lilongwe cities were also at a reasonable distance from each other and enabled the researcher to easily travel between them for data collection. In Malawi, there were 15 football clubs. Blantyre and Lilongwe cities had 5 football clubs each while Mzuzu had two football clubs only. The other towns that had one football club each were Salima, Kasungu and Zomba.

3.4 Target Population

The study targeted the population of 518 subjects which included 450 football athletes, 45 amateur football coaches and 13 football club sponsors and 10 football competition sponsors in Malawi. The athletes, coaches and sponsors were registered with the Football Association of Malawi (FAM) and took part in the Super League of Malawi. The total number of football clubs playing in the Super League of Malawi was 15. Each football club had thirty athletes and three coaches (www.fam.mw/wp). Only athletes and coaches from 8 football clubs (4 from Blantyre and 4 from Lilongwe) participated in the study. This arrangement was made so as to reduce costs because Blantyre, the

commercial city, and Lilongwe, the capital city, are at a considerable distance from each other. Also, many football clubs from which participants originated as well as competition sponsors were based within the two cities. Therefore, the researcher was able to find the teams without difficulties in terms of movements from one suburb to the other (Kothari, 2004). In the cities of Blantyre and Lilongwe, there were 300 football athletes, 10 football head coaches, 20 assistant football coaches belonging to 10 football teams and 12 football club sponsors. Two of the other football clubs registered with the Football Association of Malawi were based in Mzuzu, 1 in Zomba city, 1 in Salima town and 1 in Kasungu town. There were 8 football competition sponsors, namely Southern Bottlers, Telecom Network Malawi, Airtel Malawi, First Merchant Bank, Standard Bank, Chipiku, Carlsberg and Fellowship Association of Malawi. The brand marketing officers represented the sponsoring companies to amateur football activities in responding to the questionnaire.

3.5 Sampling Technique

In the study, sample of athletes and coaches was randomly determined from 10 football clubs registered by the Football Association of Malawi and which existed in Blantyre and Lilongwe cities. Purposive sampling was used to select 10 football club sponsors and 8 football competition sponsors from the two targeted cities. The aforementioned selection procedure ensured that only active football athletes, coaches and sponsors were included as participants in the study (Paul, Khan, Akter, *et al.*, 2015).

3.6 Sample Size

The sample size of the study was determined using the Table designed by Kerjice and Morgan (1970) through the following formula:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where: S: required sample size

X: the Table value of Chi-Square for 1 degree of freedom at the desired confidence (3.8416).

N: the population Size

P: the population proportion (assumed to be .50)

d: the degree of accuracy expressed as a proportion (.05)

In the study area, a set of 4 randomly sampled football clubs came from Blantyre city and another set of 4 randomly sampled football clubs came from Lilongwe city. In accordance with the Table and the formula, a total of 282 participants distributed as 240 football athletes, 24 football coaches, 8 representatives of football competition sponsors and 10 representatives of football club sponsors was determined to take part in the study. A sub-total of 141 participants from Lilongwe (120 athletes, 12 coaches, 5 football club sponsors and 4 football competition sponsors) and 141 participants with similar categories and numbers from Blantyre participated in the study (Table 3.1)

Table 3.1 Sample Size

City	Athlete	Coaches	Sponsors	Total
Blantyre	120	12	9	144
Lilongwe	120	12	9	144
Sub Totals	240	24	18	282

3.7 Research Instruments

In the study, self-reported closed ended questionnaires with 35 items were administered to amateur football athletes, coaches and sponsors. This was done to minimize transport costs since many of the amateur football clubs were based in Blantyre and Lilongwe cities. A questionnaire was a suitable instrument for getting data from the respondents in varying geographical locations (Brown, *et al.*, 2013). It contained four sections: A) demographic characteristics of participants with 3 items; B) knowledge on doping with 24 items; C) reported prevalence of doping with 5 items; and D) attitudes towards doping with 5 items. Data in Sections B and C was scored using (3) for ‘yes’ (high Knowledge), (2) for ‘not sure’ (Partial Knowledge) and (1) for ‘no’ (No Knowledge). In Section, D data was scored (3) for ‘No’ (Total Disagreement), (2) ‘not sure’ (Partial Disagreement) and (1) for ‘No’ (Agreement). The questionnaire was close ended format to minimize the time consumed by participants in responding to them with each group (athletes, coaches and sponsors) having its own (Appendices IA, IIB and IIIB). The questionnaire was adapted from those used in previous studies of Moran, Guerin and Kirby, (2008), Petroczi & Aidman, (2009) and Blank, *et al.*, (2013)

3.8 Recruitment of Research Assistants

Two research assistants whose academic qualifications were the Malawi School Certificate of Education were recruited to help in data collection. The research assistants were oriented a day prior to pre-testing exercise. This was the case so that the data collection during the pretesting period could offer practical experience for them in administering questionnaires. The research assistants were trained in conducting and guiding of respondents on the questionnaire during data collection.

3.9 Pre-Testing of Instruments

The questionnaire was pre-tested on the randomly sampled 24 athletes, 2 coaches, and 2 sponsors. This represented 10% of the total sample of the study from the sampled population and the aim was to identify weak areas of the questionnaire. The respondents were taken from a targeted population of football clubs and sponsors who were not included in the sample. This was done to maintain the characteristics of participants similar to those in the selected sample. Adjustments were made to the questionnaire following the weaknesses that were observed during the pre-testing

3.9.1 Validity

The questionnaire was adapted from the previously used studies (Moran, *et al.*, 2008; Petroczi & Aidman, 2009 and Blank, *et al.*, (2013). The adaptation process maintained the original validity of the questionnaire by first, having a rigorous discussion with competent university supervisors in research methods and social-psychology of sports over the quality of the questionnaire (Kothari, 2004). Secondly, each question item was

aligned to the objective it intended to measure. The items were clustered under Sections A, B, C and D of the main objective they intended to measure. Furthermore, the questionnaire was designed based on the literature reviewed related to the use of performance enhancing substances, reported prevalence of doping, knowledge and attitude on doping. Finally, the wording of the question items was made simple and direct for respondents to understand in the same way.

3.9.2 Reliability

Despite the fact that the reliability indexes scale of the questionnaire was reported in previous studies (Moran, *et al*, 2008; Petroczi & Aidman, 2009), in this study the reliability test results using Cronbach's Alpha was 0.90. In this test, Pearson Correlation was used to determine relationships between independent and dependent variables in the comparative groups. The questionnaire underwent the test-retest procedure to ascertain its reliability since it was adapted to suit the Malawian context. The questionnaire was administered twice to 28 participants representing 10% of the total population in the study area at a two-weeks interval. The participants were taken from within the targeted population of the study, but outside the sampled football clubs and individual representatives of sponsors to avoid predetermined responses and results of the actual study (Afolayan & Adegboyega, 2012). Two weeks were adequate for the involved respondents to be unable to recall what they gave previously (Cooper & Schinder, 2000). This meant that the data collected using this questionnaire during the study was also reliable despite modifications in the items.

3.10 Data Collection Procedures

During the study, data was collected by the researcher and the two research assistants. The questionnaires were self-administered and targeted footballer athletes and coaches during their training sessions, and sponsors while still in the offices in order to maximize the questionnaire return rate (Wang, Yang, Chen, *et al.*, 2015). Officially, the following data collection procedure was followed. Upon request, the General Secretary of Football Association of Malawi wrote to the concerned football club managers to allow the researcher to meet targeted participants in the study. In order to use time effectively and efficiently, 48 hours prior booking of participants were done. The football club managers introduced the researcher to representatives of the sponsors and coaches. Coaches from the football clubs introduced the researcher to athletes and explained the purpose for meeting them.

3.11 Data Analysis and Presentation

Data analysis was done using Statistical Package for Social Scientists (SPSS version 20.0) at a confidence level of 0.05. The data was cleaned using the box plot to attain quality (Paul, *et al.*, 2015). The analysis of the data was based on the assumptions that the samples involved were normally distributed and independent of each other (Cooper & Schinder, 2000) following the central limit theory. Descriptive analysis of the data was conducted using cross-tabulation to calculate the means, standard deviations, percentages and frequencies of responses among football athletes, coaches and representatives of sponsors.

One Way Analysis of Variance (ANOVA) was used to compare knowledge and attitude on doping by groups of athletes, coaches and sponsors. One Way Variance of Analysis has the ability to determine whether there are differences in the means of continuous Dependent Variables across three or more groups in the study (DeCoster, 2006). In this study, the continuous dependent variables included knowledge and attitude on doping and the three groups to be compared were athletes, coaches and sponsors. .Any significant F ratio was subjected to Tukeys's Honest Significant Differences (Tukeys' HSD) to trace the source of significant differences. Turkeys HSD has the capacity to compare three or more levels of one factor and it also assumes normality, independence and equality of variance (Cooper & Schinder, 2000; DeCoster, 2006).

Chi-Square analysis was employed in order to determine the association between age, education and experience of amateur football athletes, coaches and representatives of sponsors and their knowledge and attitude on doping at $p = 0.05$. This was because the sample was randomly sampled and its size was more than 10 (DeCoster, 2006). Also the data collected was quantitative in nature and in frequency form (Cooper & Schinder, 2000). It was assumed that the population sample and its observations were independent (DeCoster, 2006).

Pearson Correlation was used to establish the relationship between knowledge and attitudes of athletes, coaches and sponsors on doping as the data for the two variables were assumed to be linearly related (Chee, 2015). Also, Pearson correlation was suitable because both knowledge and attitude were continuous variables (Chee, 2015). It was as

well assumed that the data had no outliers, had valid measurements and was taken from an unbiased sample (Chee, 2015).

3.12 Logistical and Ethical Considerations

In order to conduct the study, approval was firstly obtained from Kenyatta University Graduate School (Appendix 4). For the sake of ethical approval, a request was made to the University Ethics Review Committee and was granted (Appendix 5). In Malawi, clearance was obtained from the Ministry of Labour, Youth, Sports and Manpower Development (Appendix 8) to access football athletes, coaches and sponsors and Football Association of Malawi (Appendix 9). Each participant was asked to declare consent by signing a Form of Consent before responding to questionnaires (Appendices I A, B and C). The respondents were assured that the information obtained was for academic purposes and would be kept with high confidentiality. Respondents were further assured that no reprisal will arise from the information provided by them through the filling of the questionnaire. Respondents were told to fill the form of withdrawal from participating in the study if they were not comfortable. The respondents were codified using numbers and not names for confidentiality.

CHAPTER FOUR: FINDINGS

4.1. Demographic Details of the Participants

In this study, 274 participants comprising 235 (85.8%) athletes, 24 (8.8%) coaches and 15 (5.4%) sponsors out of the 282 sampled participants responded to the self-administered questionnaire. This represented 97.2% return rate of responses. Sponsors were represented by the marketing managers of the brands sponsoring the particular football competitions or/and football clubs.

4.1.1 Distribution of Participants Based on Their Age

Table 4.1 shows the distribution of age of athletes, coaches and sponsors who took part in the study.

Table 4.1: Distribution of Participants Based on Their Age (N=274)

Age (Years)	Athletes		Coaches		Sponsor		Totals	
	N	(%)	N	(%)	N	(%)	N	(%)
15-19	32	13.6	-	-	-	-	32	11.7
20-24	66	28.1	-	-	-	-	66	24.1
25-29	83	35.3	10	41.7	3	20	96	35
30-34	50	23.0	8	33.3	10	66.7	72	26.3
35-39	4	1.7	6	25	2	13.3	8	2.9
TOTALS	235	(100)	24	(100)	15	(100)	274	100

Results in Table 4.1 show that athletes, coaches and sponsors were aged between 18 and 36 years. This implies that most football athletes (35.3 %) were aged between 25 and 29 years, followed by 28.1% who were aged between 20 and 24 years. Some athletes (23%)

were aged between 30 and 34 years, others (13.6%) were aged between 15 and 19 years and few (1.7%) were aged between 35 and 39 years old. Among the coaches (41.7%) were aged between 25 and 29 years while 33.3% were aged between 30 and 34 years and 25% of coaches were aged between 35-39 years. Football sponsors (66.7%) were aged between 30 and 34 years while 20% were aged between 25 and 29 and 13.3% were aged between 35 and 39 years. The levels of education of the participants are presented in the next section.

4.1.2 Levels of Education of Football Athletes, Coaches and Sponsors

The highest levels of education of respondents are presented in Table 4.2.

Table 4.2: Highest Levels of Education of the Participants (N=274)

Age (Years)	Athletes		Coaches		Sponsors		Totals	
	N	(%)	N	(%)	N	(%)	N	(%)
J.C.E	65	27.7	3	12.5	0	0	68	24.8
M.S.C.E	145	61.7	12	50	0	0	157	57.3
Diploma	24	10.2	9	37.5	4	26.7	37	13.5
B. Degree	1	0.4	0	0	11	73.3	12	4.4
TOTALS	235	100	24	100	15	100	274	100

Results in Table 4.2 show that most participants (57.3%) had the Malawi School Certificate of Education followed by 24.8% with Junior Certificate of Education and 13.5% with Diploma while 4.4% had Bachelors' Degree. For the athletes, 61.7% had the Malawi School Certificate of Education, 27.7% had the Junior Certificate of Education, 10.2% had Diploma and 0.4% had a Bachelors' Degree. The study also found out that

50% of coaches had the Malawi School Certificate of Education followed by 37.5% who had Diploma and 12.5% had the Junior Certificate of Education. For the sponsors, 73.3% and 26.7% had a Bachelors' Degree and Diploma respectively. The experiences of the participants in different football matters are presented in the next section.

4.1.3 Experiences of Participants in Playing, Coaching and Sponsoring Football

Table 4.3 presents the experiences of the participants in playing, coaching and sponsoring football in Malawi

Table 4.3: Experiences of Athletes, Coaches and Sponsors in Football (N=274)

Experience (Years)	Athletes		Coaches		Sponsors		Totals	
	N	(%)	N	(%)	N	(%)	N	(%)
0-3 years	47	20	4	16.7	1	6.7	52	19
4-7 Years	139	59.1	17	70.8	13	86.6	169	61.7
>8 Years	49	20.9	3	12.5	1	6.7	53	19.3
	235	(100)	24	(100)	15	(100)	274	(100)

Results in Table 4.3 show that 59.1% of athletes had 4 to 7 years' experience in playing football while 20.9% had 8 years and above of experience and 20% of athletes had 0 to 3 years' experience in playing football. For coaches (70.8%) had 4 to 7 years coaching experience followed by 16.7% who had 0 to 3 years' experience and 12.5% who had 8 or more years of experience in coaching football. Among the sponsors (86.6%) had 4 to 7 years' experience in sponsoring football related activities and 6.7% had 0 to 3 years and 8 years and above of experience in sponsoring football related activities. It can be

observed that 80% of athletes, 83.3% of coaches and 93.3% of sponsors had more than 4 years' experience of playing, coaching and sponsoring of football respectively. They were in a good position to share knowledge, attitudes and practice of doping in football in Malawi. Reported prevalence of doping among athletes is presented in the next section.

4.2 Reported Prevalence of Doping among Football Athletes in Malawi

Responses of athletes, coaches and sponsors on the reported prevalence of doping among athletes in Malawi are presented in Tables 4.4 and 4.5.

Table 4.4: Reported Prevalence of Doping among Football Athletes (N=235)

Question/Response	N	%	N	%	N	%	N	%
	Yes		No		Not Sure		Totals	
Have you ever been tested for doping?	100	42.6	135	57.4	0	0	235	100
	Once		Twice		Thrice			
How many times have you been tested for doping within 1 year?	214	91.1	21	8.9	0	0	235	100
	Positive		Negative		Not Sure			
What were the results of the tests for doping ?	0	0	222	94.5	13	5.5	235	100
	Yes		No		Not Sure			
Have you ever doped to enhance performance?	0	0	230	97.9	5	2.1	235	100
	Yes		No		Not Sure			
Do you know any football player who dopes?	4	1.7	170	72.3	61	26	235	100

Table 4.4 revealed that among football athletes (42.6%) were tested for doping whereas 57.4% were not tested for the same in Malawi. The athletes (8.9%) were tested for doping more than once in the previous 1 year and (91.1%) were not tested for doping

more than once in the previous 1 year. Also, athletes (94.5%) knew their doping status as negative and 5.5% were not sure of their doping status. Furthermore, (97.9%) of athletes never used performance enhancing substances and athletes (2.1%) were not sure. Athletes (1.7%) knew those who used performance enhancing substances while (72.3%) did not know and (26%) were not sure about any football athletes who doped.

Table 4.5: Reported Prevalence of Doping by Coaches and Sponsor (N=39)

Question/Response		Coaches		Sponsors		Totals	
		N	%	N	%	N	%
Have athletes ever been tested for doping?	Yes	10	41.6	10	66.7	20	51.3
	No	13	54.2	5	33.3	18	46.1
	Not Sure	1	4.2	0	0	1	2.6
	Totals	24	100	15	100	39	100
How many times were athletes tested for doping in 1year ?	Once	12	50	5	33.3	17	43.6
	Twice	9	37.5	7	46.7	16	41
	Not Sure	3	12.5	3	20	6	15.4
	Totals	24	100	15	100	39	100
What were the results of the tests for doping?	Positive	1	4.2	8	53.3	9	23.1
	Negative	21	87.5	4	26.7	25	64.1
	Not Sure	2	8.3	3	20	5	12.8
	Totals	24	100	15	100	39	100
Have athletes ever used substances to enhance performance?	Yes	1	4.2	9	60	10	25.6
	No	16	66.6	6	40	22	56.4
	Not Sure	7	29.2	0	0	7	17.9
	Totals	24	100	15	100	39	100
Do you know any football player who use performance enhancing drugs?	Yes	0	0	7	46.7	7	17.9
	No	23	95.8	5	33.3	28	71.8
	Not Sure	1	4.2	3	20	4	10.3
	Totals	24	100	15	100	39	100

Results in Table 4.5 show that 41.6% of coaches knew athletes who were tested for doping while 54.2% did not know and 4.2% were not sure. Similarly, 37.5% of coaches reported that football athletes were tested for doping more than once in the previous 1 year, while 50% of coaches indicated that athletes were tested for doping only once in the previous 1 year and 12.5% were not sure. Coaches (4.2%) further reported that athletes tested positive for doping while 87.5% of coaches indicated that athletes were tested negative for doping and 8.3% were not sure. Also, (66.6%) of coaches reported that athletes never used performance enhancing substances. Finally, coaches (95.8 %) did not know athletes who used performance enhancing substances and 4.2% were not sure..

Sponsors (66.7%) reported of having knowledge of football athletes who were tested for doping. Sponsors (46.7%) indicated that athletes were tested for doping more than once and 33.3% indicated that athletes were tested for doping once in the previous year. Sponsors (53.3%) further indicated that results of test for doping of athletes were negative while 26.7% indicated that results were positive. Sponsors (60%) acknowledged that football athletes used performance enhancing substances in their football career, while others (40%) did not. Finally, 46.7% of sponsors knew athletes who doped while 33.3% did not know and 20% were not sure. Results for knowledge on doping among athletes, coaches and sponsors are presented in the next section

4.3 Knowledge on Doping among Athletes, Coaches and Sponsors

Table 4.6 shows knowledge of participants on performance enhancing substances in football.

Table 4.6: Knowledge on Doping Substances of Football Athletes, Coaches and Sponsors

PES		Athletes		Coaches		Sponsors		Totals	
		N	%	N	%	N	%	N	%
Growth Hormones	Yes	209	88.9	11	45.8	9	60	229	83.6
	No	9	3.8	13	54.2	1	6.7	23	8.4
	Not Sure	17	7.2	-	-	5	33.3	22	8.0
Stimulants	Yes	193	82.1	12	50	9	60	214	78.1
	No	27	11.5	12	50	1	6.7	40	14.6
	Not Sure	15	6.4	-	-	5	33.3	20	7.3
Amino Acids	Yes	188	80	11	45.8	11	73.3	210	76.5
	No	30	12.8	12	50	0	0	92	33.5
	Not Sure	17	7.2	1	4.2	4	26.7	22	8.0
Anabolic Steroids	Yes	181	77	19	79.2	9	60	209	76.3
	No	28	11.9	2	8.3	1	6.7	31	11.3
	Not Sure	26	11.1	3	12.5	5	33.3	34	12.4
Narcotics	Yes	166	70.6	13	54.2	9	60	188	68.6
	No	38	16.2	10	41.7	3	20	51	18.6
	Not Sure	31	13.2	1	4.2	3	20	35	12.8
Diuretics	Yes	138	58.7	11	45.8	10	66.7	159	58.0
	No	62	26.4	13	54.2	1	6.7	76	27.7
	Not Sure	35	14.9	-	-	4	26.6	39	14.3
β -Blockers	Yes	121	51.5	12	50	10	66.7	143	52.2
	No	74	31.5	11	45.8	1	6.7	86	31.4
	Not Sure	40	17	1	4.2	4	26.6	45	16.4
Vitamins	Yes	26	11.1	11	45.8	9	60	46	16.8
	No	156	66.4	12	50	4	26.7	172	62.8
	Not Sure	53	22.6	1	4.2	2	13.3	56	20.4
Energy Drinks	Yes	14	6	11	45.8	10	66.7	35	12.8
	No	163	69.4	13	54.2	4	26.6	180	65.7
	Not Sure	58	24.7	0	0	1	6.7	59	21.5

The results in Table 4.6 show that football athletes, coaches and sponsors had knowledge on PES. Athletes (88.9%) identified growth hormones, stimulants (82.1%), amino acids (80%), anabolic steroids (77%), narcotics (70.6%), diuretics (58.7%), β -blockers (51.5%), vitamins (11.1%) and energy drinks (6%) as performance enhancing substances. The coaches knew anabolic steroids (79.2%), narcotics (54.2%), stimulants (50%), β -blockers (50%), amino acids (45.8%), diuretics (45.8%), growth hormones (45.8%), energy drinks (45.8%) and vitamins (45.8%) as performance enhancing substances. In this study, the sponsors identified amino acids (73.3%), β -blockers (66.7%), diuretics (66.7%), energy drinks (66.7%), anabolic steroids (60%), growth hormone (60%), narcotics (60%), stimulants (60%) and vitamins (60%) as performance enhancing substances. Levels of knowledge of participants on doping are presented in the next section.

4.4 Levels of Knowledge of Athletes, Coaches and Sponsors on Doping

Based on the 9 items on the list of performance enhancing substances in Table 4.5, it was expected that participants who scored 20 to 27 points were considered to have high knowledge while participants who scored between 14 and 19 points were considered to have medium knowledge on doping substances. Participants, who scored 13.5 points and below were considered to have low knowledge.

Table 4.7 shows levels of knowledge of athletes, coaches and sponsors on PES.

Table 4.7: Levels of Knowledge of Athletes, Coaches and Sponsors on Doping

Level of Knowledge	Athletes		Coaches		Sponsors		Totals	
	N	%	N	%	N	%	N	%
High	181	77	11	45.8	9	60	201	73.4
Medium	52	22.1	2	8.4	3	20	57	20.8
Low	2	0.9	11	45.8	3	20	16	5.8

Results in Table 4.7 show that on average 73.4% of participants had a high level of knowledge of performance enhancing substances while 20.8% of participants had medium and 5.8% had a low level of knowledge of performance enhancing substances. Among the participants, (77%) of athletes had high knowledge, 22.1% had medium knowledge and 0.9% had low knowledge on doping substances. The sponsors (60%) had higher knowledge on doping while 20% had medium knowledge and 20% of sponsors had low knowledge on the same. Similarly, 45.8% of coaches had high and low knowledge on doping substances while 8.4% of coaches had medium knowledge on performance enhancing substances. The participants' sources of information on doping substances are presented in the next section.

4.5 Participants' Sources of Information on Doping Drugs

Table 4.8 shows source of information on PES for athletes, coaches and sponsors.

Table 4.8: Sources of Information on Doping for Respondents

Source of Information	Responses								
		Athlete		Coaches		Sponsors		Totals	
		N	%	N	%	N	%	N	%
Team Coaches	Yes	153	65.1	9	37.5	1	6.7	163	59.5
	No	39	16.6	11	45.8	13	86.6	63	23
	Not Sure	43	18.3	4	16.7	1	6.7	48	17.5
Team Doctors	Yes	95	40.4	11	45.8	10	66.7	116	42.3
	No	115	48.9	9	37.5	5	33.3	129	47.1
	Not Sure	25	10.6	4	16.7	0	0	29	10.6
Media	Yes	60	25.5	10	41.7	0	-	70	25.5
	No	164	69.8	13	54.1	14	93.3	191	79.7
	Not Sure	11	4.7	1	4.2	1	6.7	13	4.7
Players	Yes	209	88.9	0	-0	0	-	209	76.3
	No	26	11.1	23	95.8	14	93.3	63	23
	Not Sure	0	0	1	4.2	1	6.7	2	0.7
Friends	Yes	59	25.1	11	45.8	12	80	82	30
	No	170	72.3	12	50	3	20	185	67.5
	Not Sure	6	2.6	1	4.2	-	-	7	2.5
Seminar	Yes	43	18.3	12	50	3	20	58	21.2
	No	187	79.6	9	37.5	10	66.7	206	75.2
	Not Sure	5	2.1	3	12.5	2	13.3	10	3.6

Results in Table 4.8 indicated that participants obtained information on doping from sources that included players, coaches, doctors, friends, media, and seminars. For football athletes they obtained information from fellow players (88.9%), team coaches (65.1%) and lastly seminars (18.3%). Coaches obtained it from seminars (50%), team doctors (45.8%), friends (45.8%) and partly from players (4.2%). Sponsors obtained it

from friends (80%) team doctors (66.7%) and coaches (6.7%). The reasons which made athletes to use performance enhancing substances are presented in the next section.

4.5 Reasons for Doping of Football Athletes in Malawi

Table 4.9 shows the reasons for doping of football athletes in Malawi

Table 4.9: Reasons for Use of Doping Substances among Athletes (N=274)

Reasons	Athletes		Coaches		Sponsors		Totals		
	N	%	N	%	N	%	N	%	
Merely imitating other football players									
Yes	173	73.6	12	50	10	66.7	195	71.2	
No	29	12.4	12	50	5	33.3	46	16.8	
Not Sure	33	14.0	0	0	0	0	33	12	
Winning Competitions									
Yes	172	73.2	12	50	11	73.3	195	71.2	
No	32	13.6	11	45.8	4	26.7	47	17.2	
Not Sure	31	13.2	1	4.2	0	0	32	11.7	
Achieving desired physical capabilities									
Yes	152	64.7	6	25	9	60	167	60.9	
No	28	11.9	12	50	6	40	46	16.8	
Not Sure	55	23.4	6	25	0	0	61	22.3	
Building muscle mass within short period of time									
Yes	84	35.7	4	16.7	4	26.7	92	33.6	
No	116	49.4	15	62.5	4	26.7	135	49.3	
Not Sure	35	14.9	5	20.8	7	46.7	47	17.2	
Changing body shape									
Yes	53	22.6	7	29.2	4	26.7	64	23.4	
No	136	57.9	17	70.8	9	60	162	59.1	
Not Sure	46	19.5	0	0	2	13.3	49	17.9	

Results in Table 4.9 show that athletes dope to imitate other athletes (73.6%), win competitions (73.2%) or to change body shape (22.6%). Coaches indicated imitating other football athletes (50%), winning competitions (50%) and building body muscles for a short period of time (16.7%) as reasons for doping among football athletes. Furthermore, football sponsors indicated that winning competitions (73.3%), imitating other football athletes (66.7%) and changing body shape (26.7%) were reasons for doping in football. Therefore, it appeared that winning competitions and imitating others were the main reasons for doping among football athletes.

4.6 Consequences of Use of Performance Enhancing Substances on Athletes

Table 4.10 shows consequences of use of performance enhancing substances on athletes

Table 4.10: Consequences of Doping on Amateur Football Athletes (N=274)

Consequences	Athlete		Coaches		Sponsors		Totals	
	N	%	N	%	N	%	N	%
Leads to sanctions against amateur athletes/team if tested positive								
Yes	179	76.2	13	54.2	10	66.7	202	73.7
No	30	12.8	9	37.5	4	26.6	43	15.7
Not Sure	26	11.0	2	8.3	1	6.7	29	10.6
Has a side effect on health of football players								
Yes	176	74.9	12	50	10	66.7	198	72.3
No	29	12.3	11	45.8	5	33.3	45	16.4
Not Sure	30	12.8	1	4.2	0	-	31	11.3
Is cheating in football								
Yes	172	73.2	10	41.7	10	66.7	192	70.1
No	43	18.3	11	45.8	5	33.3	59	21.5
Not Sure	20	8.5	3	12.5	0	-	23	8.4
Violates the rule of fair play in football sport								
Yes	169	71.9	11	45.8	9	60	189	69
No	43	18.3	12	50	5	33.3	60	21.9
Not Sure	23	9.8	1	4.2	1	6.7	25	9.1

Table 4.10, shows that athletes identified sanctions against positively tested athletes for doping (76.2%), health side effects on doping athletes (74.9%), cheating (73.2%) and violation of the rule of fair play (71.9%) as consequences of doping among football athletes. Coaches indicated sanctions against positively tested athletes for doping (54.2%), health side effects on doping athletes (50%) and cheating in football (41.7%) as consequences of doping acts. Sponsors indicated sanctions against positively tested athletes for doping (66.7%), health side effects on doping athletes (66.7%), cheating (66.7%) and violation of the rule of fair play in football (60%). Based on the results, sanctions against positively tested athletes for doping and health side effects on the body of doping athletes were the most weighted consequences of performance enhancing substances on football athletes in Malawi. Attitudes of participants towards doping are presented below.

4.7 Attitudes of Participants towards Doping

Table 4.11 shows attitudes of athletes, coaches and sponsors towards doping in Malawi.

Table 4.11: Attitudes of Athletes, Coaches and Sponsors towards Doping (N=274)

Attitudes	Athletes		Coaches		Sponsors		Totals		
	N	%	N	%	N	%	N	%	
I respect footballers who use doping	Yes	43	18.3	2	8.3	4	26.7	49	17.9
	No	171	72.8	21	87.5	10	66.7	202	73.7
	Not Sure	21	8.9	1	4.2	1	6.7	23	8.4
	Totals	235	100	24	100	15	100	274	100
Doping footballers: enjoy the game	Yes	26	11.1	0	0	6	40	72	26.3
	No	177	75.3	23	95.8	8	53.3	208	75.9
	Not Sure	32	13.6	1	4.2	1	6.7	34	12.4
	Totals	235	100	24	100	15	100	274	100
Anti doping activities Violate rights of footballers	Yes	23	9.8	1	4.2	4	26.7	28	10.2
	No	177	75.3	23	95.8	9	60	209	6.3
	Not Sure	35	14.9	0	0	2	13.3	37	13.5
	Totals	235	100	24	100	15	100	274	100
I consider players to dope in the near future	Yes	30	12.8	0	0	6	40	36	13.1
	No	182	77.4	23	95.8	9	60	214	78.1
	Not Sure	23	9.8	1	4.2	0	0	24	8.8
	Totals	235	100	24	100	15	100	274	100
Footballers must dope to improve performance	Yes	30	12.8	-	-	5	33.3	35	12.7
	No	169	71.9	23	95.8	9	60	201	73.4
	Not Sure	36	15.3	1	4.2	1	6.7	38	13.9
	Totals	235	100	24	100	15	100	274	100

Table 4.11 shows that athletes were against considering players to dope in future (77.4%), thinking that doping players enjoy games (75.3%), perceiving that anti doping activities violate right of players (75.3%), respecting players who dope (72.8%) and that athletes must dope to improve performance (71.9%). Coaches will not consider footballers to dope in the near future (95.8%), that doping footballers enjoy the game (95.8%),

perceiving that anti doping activities violate the right of footballers (95.8%), that footballers must dope to improve performance (95.8%) and to respect doping footballers (87.5%). Sponsors will not consider footballers to dope in the near future (60%); that athletes must dope to improve performance (60%); that anti doping activities violate rights of players (60%); to respect doping footballers (66.7%) and that doping footballers enjoy the game (53.3%).

The attitudes of participants were categorised into low, medium and high based on their points aggregate. The expected highest points were 15 and lowest points were 1. Participants who scored 1 to 7 points were categorised as having a low attitude towards doping. Participants who scored 7.5 to 10 points were considered as having a medium attitude towards doping. Finally, participants with 11 to 15 points were considered to have a high attitude towards doping. The items were scored as follows 3 points for 'no', 2 points for 'not sure, and 1 point for 'yes'. The participants with higher points meant were totally against doping and those with low points were in favour of doping. Table 4.12 below shows the composite attitude levels of athletes, coaches and sponsors on doping.

Table 4.12: Levels of Attitude of Athletes, Coaches and Sponsors (N=274)

Level of Attitude	Athletes		Coaches		Sponsors		Totals	
	N	%	N	%	N	%	N	%
High	175	74.5	23	95.8	9	60	207	75.5
Medium	19	8.1	1	4.2	-	-	20	7.3
Low	41	17.4	0	0	6	40	47	17.2

The results in Table 4.12 show that participants in this study had different levels of attitudes towards doping. 74.5% of athletes, 95.8% of coaches and 60% of sponsors had a high negative attitude towards doping. Athletes (8.1%) and coaches (4.2%) had a medium attitude towards doping. These results also revealed that 40% of sponsors and

17.4% of athletes had a low attitude towards doping in football.

4.8 Association between Participants' Age, Education and Experience and Their Knowledge and Attitude towards Doping

The data was subjected to Chi Square analysis in order to determine whether there was a significant association between independent variables (Age, Education and Experience) and dependent variables (Knowledge, Reported Prevalence and Attitude). The results are presented in Table 4.13.

Table 4.13: Association between Participants' Age, Education and Experience and their Knowledge, Reported Prevalence and Attitudes on Doping (N=274)

	Athlete		Coaches		Sponsors				
	X ²	Df	Sig	X ²	Df	Sig	X ²	Df	Sig.
Knowledge on Doping									
Age	103.37	52	.000	15.00	7	.036	21.67	12	.041
Education	47.23	39	.172	20.41	14	.118	12.44	6	.053
Experience	138.28	52	.000	28.22	28	.453	22.23	18	.222
Sources of Information									
Age	161.77	44	.000	18.60	8	.017	16.67	14	.274
Education	58.37	33	.004	16.39	16	.426	8.61	7	.282
Experience	54.44	44	.135	41.78	32	.116	25.16	21	.240
Reasons for Doping									
Age	50.15	40	.130	15.00	8	.059	20.00	14	.130
Education	64.44	30	.000	14.72	16	.545	11.17	7	.132
Experience	76.55	40	.000	27.60	32	.689	18.28	21	.631
Consequences of Doping									
Age	36.13	32	.282	11.75	5	.038	16.30	6	.012
Education	57.34	24	.000	13.63	10	.191	12.44	3	.006
Experience	95.35	32	.000	20.77	20	.411	24.17	9	.004
Reported Prevalence of Doping									
Age	55.98	24	.000	11.14	6	.084	15.56	12	.212
Education	28.69	18	.052	10.20	12	.599	11.17	6	.083
Experience	71.70	24	.000	35.84	24	.057	34.06	18	.012
Attitude on Doping									
Age	61.13	32	.001	2.40	3	.494	12.50	8	.130
Education	53.07	24	.001	10.50	6	.105	11.17	4	.025
Experience	96.56	32	.000	13.94	12	.304	22.73	12	.030

Results in Table 4.13 show that there was significant association between age of athletes $X^2 = 103.37$, $p < 0.001$, sponsors $X^2 = 21.67$, $p 0.041$ and knowledge on the use of performance enhancing substances. There was an association between age of athletes $X^2 = 161$ $p < 0.001$ and coaches $X^2 = 18.60$, $p 0.017$ and sources of information on the use of performance enhancing substances. The results further show that there was an association between age of coaches $X^2 = 11.75$, $p 0.038$ and sponsors $X^2 = 16.30$, $p 0.012$ and consequences of use of performance enhancing substances on athletes. There was also an association between age of athletes $X^2 = 55.98$, $p < 0.001$ and reported prevalence of the use of performance enhancing substances. Finally, the results show that there was an association between age of athletes $X^2 = 16.31$, $p 0.001$ and attitude towards use of performance enhancing substances. Based on the results, there was no association between age of athletes $X^2 = 50.15$, $p 0.130$, coaches $X^2 = 15.00$, $p 0.059$ and sponsors $X^2 = 20.00$, $p 0.130$) and reasons for use of performance enhancing substances among athletes.

The results show that there was significant association between education of athletes $X^2 = 58.37$, $p 0.004$ and sources of information on use of performance enhancing substances, $X^2 = 64.44$, $p < 0.000$ and reasons for doping as well as education of athletes $X^2 = 28.69$, $p 0.052$ and reported prevalence on use of performance enhancing substances. Finally, there was significant association between education of athletes $X^2 = 53.07$, $p 0.001$) and education of sponsors $X^2 = 11.17$, $p 0.025$) and attitude towards use of performance enhancing substances. Based on the results, there was no significant association between education of athletes $X^2 = 47.23$, $p 0.172$, coaches $X^2 = 20.41$, $p 0.118$ and sponsors $X^2 = 12.44$, $p 0.053$) and knowledge on the use of performance enhancing substances.

Results also show that there was a significant association between the experience of athletes in playing amateur football $X^2 = 138.28$, $p < 0.001$ and knowledge on the use of performance enhancing substances $X^2 = 76.55$, $p < 0.001$ and reasons for doping $X^2 = 95.35$, $p < 0.001$ and consequences of use of performance enhancing substances. Results further revealed that there was an association between the experience of athletes in playing football $X^2 = 71.70$, $p < 0.001$ and experience of sponsors in sponsoring football related activities $X^2 = 34.06$, $p 0.012$ and reported prevalence of the use of performance enhancing substances. Finally, results show that there was a significant association between the experience of sponsors $X^2 = 22.73$, $p 0.030$ and attitude towards use of performance enhancing substances. Based on the results, there was no significant association between the experience of athletes in playing football $X^2 = 54.44$, $p 0.135$, coaches in coaching football $X^2 = 41.78$, $p 0.116$ and sponsors in sponsoring football related activities $X^2 = 25.16$, $p 0.240$) and sources of information on the use of performance enhancing substances.

Hence, the null hypothesis that there was no significant association between demographic factors of football athletes, coaches and sponsors and their knowledge on doping was rejected. Similarly, the null hypothesis that there was no significant association between demographic factors of football athletes, coaches and sponsors and their attitude towards doping was also rejected. The relationship between knowledge on the use of performance enhancing substances and attitude towards these is presented in the next section:

4.9 Relationship between Knowledge and Attitude towards Doping

The dependent variables of knowledge on use of performance enhancing substances and attitude on use of performance enhancing substances by athletes, coaches and sponsors were subjected to Pearson correlation analysis in order to establish if there was a significant relationship. The results are presented in Tables 4.14 below.

Table 4.14: Relationship between Knowledge and Attitude towards Doping (N=274)

Variable (s)	N	Attitude	
Knowledge on Use of PES	274	R	-0.201**
		Sig.	0.001

Results in Table 4.14 reveal that there was a weak significant relationship between knowledge on doping drugs and attitude towards doping -0.201 ($p = 0.001$) by athletes, coaches and sponsors. Therefore, the null hypothesis that there was no significant relationship between knowledge and attitude towards doping by football athletes, coaches and sponsors in Malawi was rejected.

4.10 Differences in Knowledge on Doping Drugs, Reported Prevalence of Doping and Attitude towards Doping among Football Athletes, Coaches and Sponsors

The F. ratios were subjected to One Way Analysis of Variance in order to test the Null Hypotheses. The first null hypothesis stated that there was no significant difference in knowledge on doping among amateur football athletes, coaches and sponsors in Malawi. The second null hypothesis stated that there was no significant difference in attitudes on doping among football athletes, coaches and sponsors in Malawi. The results are presented in Table 4.15.

Table 4.15: Differences in Knowledge on Doping Substances, Reported Prevalence of Doping and Attitude on Doping among Participants (N=274)

X	Athlete		Coaches		Sponsors		p-value
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	
Knowledge on Doping Drugs	20.76	$\pm 3.35^a$	18.54	$\pm 7.56^b$	21.40	$\pm 6.95^b$.011
Source of Drug Information	11.65	$\pm 3.36^a$	11.00	$\pm 4.31^a$	10.00	$\pm 1.73^a$.143
Reasons for Doping	11.25	$\pm 2.27^b$	8.92	$\pm 3.53^a$	10.67	$\pm 2.94^b$	<.001
Consequences of Doping	10.34	$\pm 2.72^b$	8.13	$\pm 3.63^a$	9.33	$\pm 3.65^{ab}$.001
Reported Prevalence of Doping	6.88	$\pm 1.42^a$	7.33	$\pm 2.16^a$	11.07	$\pm 4.04^b$	<.001
Attitude on Doping	13.20	$\pm 2.83^{ab}$	14.58	$\pm 1.13^b$	12.13	$\pm 3.50^a$.019

^{A, b} Means in the same row with the same superscript are not significantly different.

Table 4.15 shows that there were significant differences in knowledge on doping substances between athletes (20.76 \pm 3.35) and coaches (18.54 \pm 7.56) and between athletes (20.76 \pm 3.35) and sponsors (21.40 \pm 6.95) p. 011; reasons for doping between athletes (11.25 \pm 2.27) and coaches (8.92 \pm 3.53) and between coaches (8.92 \pm 3.53) and sponsor (10.67 \pm 2.94^b), p <. 001 and on consequences of doping between athletes (10.34 \pm 2.72) and coaches (8.13 \pm 3.63), p. 001. The null hypothesis that there was no significant difference in knowledge on doping among football athletes, coaches and sponsors in Malawi was also rejected.

Table 4.15 also shows that there were significant differences in reporting on the

prevalence of doping in amateur football between athletes (6.88 ± 1.42) and sponsors (11.07 ± 4.04) and coaches (7.33 ± 2.16) and sponsors (11.07 ± 4.04), $p = 0.001$. Similarly, the study found that there were significant differences in attitudes towards doping between coaches (14.58 ± 1.13) and sponsors (12.13 ± 3.50), $p = 0.003$. Therefore, the null hypothesis that there was no significant difference in attitude towards doping among football athletes, coaches and sponsors in Malawi was rejected.

4.11 Post Hoc Tukeys' Honesty Significance Difference (HSD) Test Results

Table 4.16 shows Post Hoc Tukeys' Honesty Significance Difference test results on knowledge, reported prevalence of doping and attitudes towards doping by participants.

Table 4.16: Post Hoc Tukeys' Honesty Significance Difference Test Results

Dependent Variable(s)	(I)	(J)	MD	Sig.
Knowledge of PEDs	Athletes	Coaches	2.220	0.011
		Sponsors	0.638	0.781
	Coaches	Sponsors	2.858	0.042
Source of Information	Athletes	Coaches	0.568	0.721
		Sponsors	0.184	0.978
	Coaches	Sponsors	0.383	0.939
Reasons for Doping	Athletes	Coaches	2.330	0.000
		Sponsors	0.580	0.647
	Coaches	Sponsors	1.750	0.078
Effects of Doping	Athletes	Coaches	2.220	0.001
		Sponsors	1.011	0.383
	Coaches	Sponsors	1.208	0.408
Prevalence of Doping	Athletes	Coaches	0.452	0.441
		Sponsors	4.186	0.000
	Coaches	Sponsors	3.733	0.000
Attitude on Doping	Athletes	Coaches	1.569	0.441
		Sponsors	1.898	0.055
	Coaches	Sponsors	3.467	0.002

Results in Table 4.16 show that the significant mean differences in knowledge on doping substances existed between athletes and coaches ($MD = 2.22$; $p = 0.011$) and between

coaches and sponsors (MD = 2.86; p 0.042). The results further show that significant mean difference on reasons for doping by athletes existed between athletes and coaches (MD= 2.33; p < 0.001). Also, significant mean differences in consequences of the use of performance enhancing substances on athletes existed between athletes and coaches (MD= 2.22; p < 0.001). The results show that significant mean difference in reported prevalence of the use of performance enhancing substances among athletes existed between athletes and sponsors (MD = 4.19; p <0.001) and between coaches and sponsors (MD = 3.73; p <0.001). Finally, the results reveal that significant mean difference in attitude towards use of performance enhancing substances existed between coaches and sponsors (MD = 3.47; p 0.002).

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Demographic Details of Participants

5.1.1 Return Rate of Questionnaire from Respondents

The return rate of the respondents to the questionnaire was 97.2%. This could be because the questionnaires were administered to the respondents face to face, and at times before training of athletes and coaches or during the office break-time for the sponsors. Also, the booking to meet the respondents was made 48 hours in advance. These findings were consistent with the return rate of 95% in the cross-sectional survey of Al Ghobain, *et al.*, (2016) which estimated the prevalence, knowledge and attitude of doping among sport athletes in Saudi Arabia. Muwonge, *et al.*, (2015) experienced a similar return rate of response in Uganda (93.8%) when they explored attitude, knowledge and practices among professional athletes including footballers. The return rate implied that the data obtained from the survey was adequate. The selected demographic characteristics of the respondents are discussed under age, education and experience below.

5.1.2 Distribution of Respondents by Their Age

The findings of the study indicated that the participants comprised of varied age groups with the youngest having the age of 18 and the older having the age of 36 (Table 4.1). The findings reflect those found in Uganda, where professional athletes from 18 years and above participated in a study (Muwonge, *et al.*, 2015). Based on the findings of the current study, the participants comprised of the youths and most of the athletes (63.4%) were aged between 20 and 29 years. The results implied that the study targeted the right

population (athletes) in football. The case was similar to the study by Afolayan and Adegboyega (2012) in Nigeria, where they recruited 43.4% of participants aged between 21 and 30 years in determining knowledge and use of doping substances among elite athletes. Despite the presence of coaches and sponsors, the trends of ages of participants in our study resembles that recruited by Waddington, Malcolm, Roderick *et al.*, (2004) in the European Football League where the youngest was 18 and the oldest was 31 years.

On the contrary, Laure, Thouvenin, & Lecerf, (2001) found out that in Eastern France, 53.8% participants (athletes and coaches) were aged between 23 and 31 years although their age range was between 19 and 62 years. In Kenya, regardless of homogeneity of origin of the participants, Kamenju, Mwisukha, Rintaugu, *et al.*, (2014) found that teacher trainees in Kenyan Colleges were aged between 18 and 26 years. In Australia, age bracket of participating athletes ranged from 18 to 44 years (Dunn, Thomas, *et al.*, (2009) while Ozdemir, Nur, Bagcivan, *et al.*, (2005) found out that most participants (69.6%) in Turkey were aged between 20 to 24 years. The similarities in age of athletes in this study and other studies (Waddington, Malcolm, Roderick *et al.*, 2004; Afolayan and Adegboyega, 2012; Muwonge, *et al.*, 2015) justify our case.

5.1.3 Distribution of Respondents by Their Levels of Education

This study found out that about 75.3% of participants had the Malawi School Certificate of Education (O Level) and above (Table 4.2). The findings were in agreement with Molebe (2012) who found out that (43.5%) of athletes in Nigeria had attained secondary school education. On the contrary, Muwonge, *et al.*, (2015) found out that in Uganda, the education level of athletes, including footballers, was higher with most of them having

attained diplomas and degrees.

The findings of our study were in some deviations from the results of studies conducted in Australia and Canada regarding the level of education for coaches. For example, in Australia, (Blank, *et al.*, 2013) found out that coaches were having high academic qualifications, 53.2% of them with first degrees. Similarly, in Canada, it was found out that among the 560 coaches participating in doping studies, 16.9% had a Bachelor's Degree and 51.6% had Master's Degrees (Sullivan, 2013). In this study, most participants had low academic qualifications with majority (57.3%) holding Malawi School Certificate of Education (O level). In other words, their knowledge and attitude on doping could be a bit difficult to understand or conceptualize the processes and practices of doping.

5.1.4 Distribution of Respondents by Their Experience

The findings indicated that participants had varied experiences (1-8 years) in playing, coaching and sponsoring football (Table 4.3) with 59.1% of the players having played for 1-7 years in football. The findings resonated with Tahiraj, *et al.*, (2016) in Kosovo who found out that experience of participants in playing football and running ranged from 1 to 5 years. Tahiraj, *et al.*, (2016), however, did not specify the number of athletes in particular categories of experience in sports. Cobalt (2014) found similar trends in the Kenyan athletes with 80.3% having had 1 to 9 years of competition experience. Similarly, Sekulic, *et al.*, (2016) found out that athletes who took part in doping in Kosovo had an average of 8 years' experience. The 1 to 7 years' experience for athletes

in this study implied that they had adequate knowledge and attitude regarding the use of performance enhancing substances in football in Malawi.

Based on the findings, the experiences of Malawian coaches were different from those of Australia, Greece and Canada coaches. This was attributed to the youthful age (25-35 years) coaches in Malawi. In Australia, coaches had high experience in coaching with the average of 13 to 15 years in various sports disciplines including football (Blank, *et al.*, 2014). In Greece, Psouni, *et al.*, (2015) found out that athletes and coaches had 5 to 11 years' experience in sporting activities. Similarly, in Canada, it was reported that the experience of 560 coaches, most of whom (60%) were football coaches had 1 to 49 years' experience of coaching (Sullivan, 2013). The differences in experience of coaches in our study and those in the previous studies (Sullivan, 2013; Psouni, *et al.*, 2015) implied different outcomes in their knowledge and attitude towards use of performance enhancing drugs. In this study, 93.3% of sponsors were engaged in football related activities for more than 4 years and this adequately catalysed possibility of them acquiring knowledge and attitude towards doping in football.

5.2 Prevalence of Doping among Football Athletes

In this study, athletes (42.6%) reported that they were tested for doping (Tables 4.4 and 4.5). The results were supported by Al Ghobain, *et al.*, (2016) who found out that 35.6% of athletes in Saudi Arabia were tested for doping. Similarly, Boit, Dimeo, Onywera, *et al.*, (2010) reported that in Kenya, 41% of middle and long distance runners were tested for use of performance enhancing substances. The findings of this study were in contrast

with Sekulic, Tahiraj, Zvan, *et al.*, (2016) who reported that 86% of Kosovo athletes never underwent examinations for banned drugs with a view that doping never existed. Hence, the findings of this study indicate that the trends of proportions of tested athletes for doping are not far from those in other studies (Al Ghobain, *et al.*, 2016; Boit, Dimeo, Onywera, *et al.*, 2016) and that issues of doping in football are crucial among athletes, coaches and sponsors.

In our study, 89% reported that football athletes were tested for doping more than once in the previous year. These findings were consistent with Alghobain, *et al.*, (2016) who reported that 54.9% of athletes were tested more than once within twelve months. Similarly, Waddington *et al.*, (2004) reported that 65% of English football athletes were tested for doping substances of which 32% were tested more than once in a year. Boit, *et al.*, (2010) reported that 39% of Kenyan athletes were tested more than once. This could be possible because Kenya was considered as a powerhouse in long distance running and, therefore, athletes were frequently tested. Based on the results, the low proportions of athletes who were tested for doping could be attributed to a number of reasons. The first reason is that Malawi Anti-Doping Organisation was recently established and has not adequately facilitated on testing of athletes. Secondly, there are no accredited laboratories to test athletes for doping in southern Africa.

The findings of this study revealed that no athlete directly indicated the existence of using performance enhancing substances in football except the use of second hand reports (Table 4.4 and 4.5). This might be the case because athletes were either afraid or shy to

confess their doping practices. The findings were similar to those by Waddington, *et al.*, (2004) who reported that 2% of English professional football athletes used performance enhancing substances. In contrast, Lazuras, Barkoukis, Rodafinos, *et al.*, (2010) reported that in Greece 9.9% of athletes including footballers admitted having doped. Similarly, Ama, *et al.*, (2003) indicated that 8% of football athletes in Cameroun acknowledged having used cocaine and stimulants before and after matches. Also, Al Ghobain, *et al.*, (2016) found out that the lifetime prevalence of doping among football players in Saudi Arabia was 4.3%. Furthermore, Ozdemir, *et al.*, (2005) reported that 3.2% of athletes in Turkey used performance enhancing substances. The same was the case among athletes in the Asian Youth Games where 0.8% doped (Kim & Kim, 2013). The prevalence of the use of performance enhancing substances in this study was not clear. This could be the case because athletes failed to confess having used the performance enhancing substances because the matter was sensitive and had criminal connotations. The reported prevalence of the use of performance enhancing substances by coaches and sponsors could be a critical eye opener of the possible existence of doping in Malawi football.

Based on the findings of this study, 94.5% reported that athletes were tested negative for doping. This did not preclude the possibility of doping in Malawi football because it could have been possible that those tested were non-users of performance enhancing substances. In contrast to these results, Dah, Bogui, Yavo, *et al.*, (2002) in Ivory Coast reported that 18.7% of soccer athletes admitted having used doping substances in their sporting career. This could be attributed to the fact that football in Ivory Coast was so competitive as opposed to Malawi that football players were compelled to use

performance enhancing substances.

Our study revealed that athletes (97.9%) never used performance enhancing substances. These results were in contrast to Badea (2016) who reported that 10.5% ever doped knowingly in Romania. In Eastern France, athletes used stimulants, narcotics, and anabolic steroids which were the common banned substances used by athletes (Laure, *et al.*, 2001). Similarly Ozdemir, *et al.*, (2005) reported that in Turkey 65% of athletes used anabolic steroids. Therefore, there is a possibility that the use of performance enhancing substances could occur among football athletes since the assumptions are usually based on perceived and subjective reporting. Consequently, there is need for further research on prevalence of doping in football based on the records of tested athletes within the jurisdiction of Malawi Anti-Doping Organisation.

In this study, athletes (1.7%) knew those who used performance enhancing substances in football. The revelation was consistent with findings by Waddington *et al.*, (2004) where in English football, 6% of football players confessed to have known athletes who doped. This could possibly be reflected in the secret information which athletes shared concerning doping practices in Malawi football. In Korea, it was found out that 1.6% of 320 athletes knew those who used performance enhancing substances (Kim & Kim, 2013). Similarly, in Ivory Coast, 38% of 2166 soccer players indicated having known athletes who used performance enhancing substances (Dah, *et al.*, 2002). Also, Kamenju (2014) in Kenya found out that 32.9% of athletes knew those who used performance enhancing substances in sports. In Saudi Arabia, it was reported that 22 % of athletes

knew some footballers who used performance enhancing substances (Al Ghobain, *et al.*, 2016). Badea (2016) equally reported that 42% of athletes knew of other athletes who used performance enhancing substances. Based on the results of our study, the low numbers of athletes who risked to reveal the athletes using performance enhancing substances entails the secrecy that exists among athletes in doping practices.

In this study, coaches reported that athletes had been tested for doping more than once in the previous 1 year and that some were tested positive for doping. They further reported that some athletes ever used performance enhancing substances. Our study also revealed that coaches (95.8%) did not know athletes who doped and thus conformed to the results by Yamaguchi, Horio, Goto, *et al.*, (2016) who found out that in Japan, despite coaches giving instructions to athletes regarding doping, they did not know its prevalence among athletes (Table 4.5). However, the results of this study did not concur with those of other studies conducted in Australia and Poland. In Australia, Engelberg, Moston, Blank, *et al.*, (2014) reported that 42.1% of coaches knew athletes, including footballers, who used Anabolic Steroids despite not having trained them. Similarly, in Poland, 13.5% of 260 coaches knew athletes who used doping substances in confidence (Laure, *et al.*, 2001). In the studies by Engelberg, *et al.*, (2017); Yamaguchi, *et al.*, (2016); and Laure, *et al.*, (2001), issues of knowledge of whether athletes were tested or not, were not explored. In Spain, 1 out of 3 football coaches and other technical personnel indicated having known football athletes who used performance enhancing substances (Sanchez & Zabala, 2015). Similarly, in Finland, 30% of 447 elite athletes revealed that there were those who were presumed to dope across sports disciplines (Alaranta, Holmila, Palmu, *et al.*, 2006). The

absence of knowledge of coaches on athletes who doped indicated that either the athletes doped in secret or that there were not many programmes on doping. Yet, such knowledge could help coaches in tracing football athletes who doped. Malawi Anti- Doping Organisation ought to embark on programmes that would orientate coaches towards knowing athletes who dope while under their charge.

This study found out that 66.7% of football sponsors knew football athletes who were tested for doping. The findings were in line with those in Australia where considering that sponsors were part of public domain were sure that doping prevailed in sports under systematic perpetuation of athletes, coaches, sports federations and clubs (Moston, Skinner, &Engelberg, 2012). Fotheringham (2006) reported that a decision by Germany's Tool Company Wurth to withdraw its sponsorship towards cycling was based on the fact that cyclists failed doping tests. Similarly, Tremlett (2008) reported that the Spanish company (Liberty Seguro) revoked the sponsorship for cycling after realizing that the tested athletes were found positive for doping. In this study, sponsors reported that athletes were tested for doping more than once and that the results were positive (Table 4.5). Sponsors further reported that some athletes never used performance enhancing substances. Their reports concerning the outcomes of the tests of athletes for doping put the ethics and the processes of handling the results in disrepute. It could as well be doubtful if the sponsors gave a true reflection of the situation on the ground. The results in this study revealed that sponsors (46.7%) knew football athletes who doped. The results were supported by a report by Tremlett, (2008) who indicated that in 2006, sponsors knew athletes who were tested for doping and made their decision to suspend

their sponsorship based on that knowledge. It was, however, interesting to note that sponsors knew athletes who doped, but did not have a forum to report against the practice. In this view, sponsors and coaches need to take an active role in relevant programmes if the fight against doping is to succeed in Malawi.

5.3 Knowledge on Doping Substances by Football Athletes, Coaches and Sponsors

The findings this study revealed that football athletes, coaches and sponsors had in general high level of knowledge (77.3%) on performance enhancing substances (Table 4.7). This meant that the participants generally had knowledge on doping substances in football. 77% of athletes demonstrated having high knowledge on doping (Table 4.6) and identified Growth Hormones, Stimulants, Amino Acids and Anabolic Steroids as doping drugs in football (Table 4.6). The results were in agreement with El-Hammadi and Hunien (2013) who, apart from Vitamins indicated Amino Acids and Anabolic Steroids as common doping drugs among athletes in Syria. On the contrary, in Saudi Arabia, Alghobain, *et al.*, (2016) identified narcotics as one of the most commonly used banned substances in sports. Brown, *et al.*, (2013) found out that 80% of elite sportspersons, of which 52% were football players in Ghana, had knowledge of doping drugs provided on the WADA list of banned substances. In Kenya, college athletes demonstrated having knowledge of the effects of performance enhancing substances on the list of banned substances of according to the World Anti-Doping Agency (Kamenju, *et al.*, 2016).

The findings of this study contrast with the general knowledge that football players had about doping drugs in Cameroun (Ama, *et al.*, 2003). In Iran, student athletes of whom 24.9% were footballers, had low knowledge (34.4%) on doping drugs as they failed to

identify β -Blockers and Growth Hormones on the list of banned substances by WADA (Arazi,Saeedi, Sadeghi, *et al.*, 2014). In Turkey, despite the athletes being students for sports education, they did not have enough knowledge on doping (Sertbas, *et al.*, 2015). General medical practitioners in South Africa showed poor knowledge of doping agents while pharmacists had a fair knowledge of these (Starzak, Derman, McKune, *et al.*, 2016). In Kenya, athletes had knowledge below average about doping substances and their effects (Chebet, 2014). In Kosovo, lack of organised educational programmes on doping was responsible for a significant low knowledge of doping substances among athletes (Sekulic, Tahiraj, Zvan,*et al.*, 2016). Carkaxhiu, Huseyin, Berisha, *et al.*, (2011) attributed the low knowledge on doping substances by athletes in Kosovo to ineffective public health policies. Another study found out those student athletes from the Department of Physical Education in Bosnia and Herzegovina lacked knowledge of doping substances (Pavlovic, & Idrizovic, 2013). The findings in our study implied that football athletes in Malawi were prone to using other performance enhancing drugs apart from Growth Hormones, Stimulants, Amino Acids and Anabolic Steroids. There is, therefore, a need for more doping programmes to be mounted in football and other sports codes.

In this study, football coaches (45.8%) demonstrated having high knowledge on doping substances (Table 4.7). The findings were in agreement with the results of the study conducted on performance enhancement drugs in which knowledge, attitude, and intended behaviour among community coaches in Hong Kong had a mean score of 66.1% of their actual knowledge on doping drugs (Fung, 2006). In Poland, sports coaches from

various disciplines had higher knowledge on doping control methods and banned performance enhancing drugs (Naukowe, Nowosielski & Szóstak, 2016). In another study, Judge, Bellar, Petersen, *et al.*, (2010) found out that certified coaches in the USA had higher knowledge on the use of performance enhancing drugs. Similarly, Sanchez, *et al.*, (2015) found out that 6.1% of coaches had a high knowledge on the drugs provided on the list of prohibited drugs by WADA. A survey conducted in Iran on 136 football coaches by Barghi, *et al.*, (2015) found out that knowledge of coaches on anti-doping rule violations and definitions on doping was low.

In this study, sponsors had higher knowledge of doping substances (60%) (Table 4.7). They knew Anabolic Steroids as performance enhancing drugs and Diuretics, Growth Hormone, Energy Drinks, Narcotics, Stimulants, Vitamins and β Blockers as doping substances (Table 4.6). The literature showed that sponsors had knowledge of doping by athletes through published scandals in newspapers and broadcasts on televisions and radios (Buechel, *et al.*, 2014; Chien, Kelly & Weeks, 2016). The knowledge of sponsors on the use of performance enhancing substances was tied to the risks that they could face once they were associated with doping scandals (Lee, Bang & Lee, 2013). However, this was based on perceptions as no sponsor was directly involved in a deliberate survey to find their knowledge on doping in sports. There is, therefore, need for further research as regards the knowledge and attitudes of sponsors on issues of doping by athletes. The findings of our study seemed to indicate that athletes, coaches and sponsors in Malawi could possibly collaborate in the fight against doping.

5.4 Source of Information on Doping for Football Athletes, Coaches and Sponsors

Results indicated that participants obtained information of doping from various sources. In this study, coaches, doctors and seminars became the main sources of information on doping for athletes, coaches and sponsors (Table 4.8). Athletes obtained information about doping drugs from team coaches, team doctors, media and fellow players. Coaches and team doctors could qualify as the main sources of information on doping because they were always in direct contact with athletes while seminars were catalysts for coaches and sponsors to share doping related issues. The findings were in line with the results of the study conducted in Uganda, where athletes obtained information of doping mainly from fellow athletes, team coaches and media (Muwoye, *et al.*, 2015). In Ghana, electronic media and coaches were the steady sources of information on doping among athletes, including footballers (Brown, *et al.*, 2013). Similarly, triathletes from Canada and United States indicated that internet was the main source of information on doping (Johnson, Butryn & Masucci, 2013). Nieper (2005) found out that British junior team athletes relied on their coaches as the major sources of information about doping issues in sports.

In a related study, Fung, *et al.*, (2006) found out that family, friends, and team colleagues were providers of information on doping drugs among Canadian athletes. Somerville, Lewis and Kuipers, (2005) found out that the team physician was the prominent source of information on doping substances among British Olympic athletes. According to Chebet, (2014) the major source of information on doping among Kenyan athletes was Athletics

Kenya (AK) (30.6%), International Athletics Association Federation (IAAF) (19.4%) and internet websites (53.6%).

Based on our findings, football coaches obtained information on doping from seminars, team doctors and friends (Table 4.8). This could be the case because the Malawi Anti Doping Organisation orientated sports officials on doping through seminars or workshops. Our results were in support of the assertion that coaches should actively participate in seminars in order to acquire important knowledge if protection of athletes from drug violations is to be achieved (Onuma, Nakajima, Abe, *et al.*, 2019). The findings of this study, however, were contrary to those of the study conducted in Croatia and Serbia which revealed that self-education was the principal source of information on doping among coaches and athletes (Mandic, Peric, Krzelj, *et al.*, 2013). In Australia, the Tyrolean coaches indicated primary education and secondary training as the main sources of information on doping (Blank, *et al.*, 2014). In our study, sponsors, obtained information on doping from friends and team doctors. Based on these findings, it would appear that athletes, coaches and sponsors shared information on doping. However, they did not utilise WADA website and internet as other sources of information on doping. The Malawi Anti-Doping Organisation and football administrators should sensitise athletes and coaches to extend their search for knowledge on doping through sources which are not regularly used such as websites, sports corners and sports events.

5.5 Reasons for Doping by Football Athletes

The findings of this study showed that athletes used doping substances for a number of

reasons. The main reasons included imitating other football athletes, winning competitions, attaining desired physical capabilities, building body muscles for a short period of time and changing of body shape (Table 4.9). These results collaborated with Ozdemir, *et al.*, (2005) in Turkey, where they found out that 47.9% of athletes used doping substances to attain good body shape, to be selected into particular sports teams, succumbing to pressure from other athletes and to recover from injuries as quickly as possible. Malik and Meenu (2016) argued that physical dependence, dissatisfaction with performance, psychological dependence, desire to relax, the belief that others are doping, influence of others, lack of social support, desire to win and please their coaches, parents, public as well as media and social economic rewards were the factors that influenced athletes to dope. Sanchez, March and Zabala (2013) found out that cyclists in Spain revealed that sports achievements, external pressure and contract agreements were the reasons for athletes to be initiated into the use of performance enhancing drugs.

Mitic and Radovanovic (2011) pointed out that the individual's characteristics, moral values and role models influenced athletes to use performance enhancing drugs in sports, including football. Tahtamouni, *et al.*, (2008) reported that 61.5% of athletes got involved in using AAS to promote their sports potentials and their body shape. Similarly, student athletes in Bosnia and Herzegovina used performance enhancing drugs for personal gains (Pavlovic, & Idrizovic, 2013). Furthermore, in Saudi Arabia, athletes, including football players doped in order to improve performance and social status (Al Ghobain, *et al.*, 2016). In Malaysia, Parnabas, *et al.*, (2013) found out that athletes believed no win could be realized without doping.

Coaches demonstrated that imitating other football athletes, winning competitions, attaining desired physical capabilities, building body muscles for a short period of time and changing body shapes were reasons which prompted social athletes to dope (Table 4.8). These results were in support of a study in Syria, where pharmaceutical student athletes indicated that athletes doped to change body shape, build muscle mass and achieve targeted physical capabilities (El Hammadi & Hunien, 2013). Furthermore, sponsors indicated that imitating other football athletes, winning competitions, attaining desired physical capabilities, building body muscles for a short period of time and changing body shape were the reasons for doping in amateur football in the study area. Based on the findings, athletes in Malawi may possibly continue doping due to pressure from other athletes as well as the desire to win and gain monetary rewards. The best practice to keep athletes clean from doping would be to promote educative programmes on doping and to emphasise on the moral values through religious teachings.

5.6 Consequences of Doping on Football Athletes

Our findings revealed that football athletes identified sanctions against doping athletes, health side effects, cheating and violation of the rules of fair play as consequences of doping among amateur football athletes (Table 4.10). Al Ghobain, *et al.*, (2016) reported that in Saudi Arabia, athletes knew the consequences of performance enhancing substances which included health hazards (36.7%) and administrative sanctions (77.5%). Use of performance enhancing substances had far reaching consequences which included its criminalization in Italy and France (Engelberg, *et al.*, 2011). Sanctions imposed on culprits of doping could be the deterrence for athletes in football in Malawi. It could also

be imperative for athletes who fail doping tests to be stopped from attending any sporting activity before they entice other athletes to dope. Furthermore, the sellers of the doping substances in black market should be brought to criminal procedures.

Coaches indicated that sanctions against positively tested athletes for doping, side health effects on the body of doping athletes, cheating in football and violation of the rules of fair play in football were the consequences of doping (Table 4.10). Our findings in this study contrasted with those of Barghi, *et al.*, (2015) who reported that football coaches in Iran had poor knowledge of side health effects of doping in athletes. Use of performance enhancing substances damages the human body and personal characters in the community. A review by Barbalho, and Barreiros (2015) from the studies between 1980 to 2013 summarised that gains in muscle strength, mass and body shape with improvement in performance were the advantages of the use of anabolic steroids. However, Barbalho, and Barreiros (2015) observed that the health side effects of anabolic steroids including tendons and ligament lesions, growth deficit, dermatological disorder, libidinous accentuation, infertility and aggression were the most retrogressive in abusers of doping drugs. Tahtamouni, *et al.*, (2008) found out that in Jordan doping athletes suffered from side health-related effects of increased appetite, unstable mood, fluid retention, headaches and increased hair growth.

In our study, sponsors indicated sanctions against positively tested athletes for doping, health side effects on the body of doping athletes, cheating and violation of the rules of fair play in football (Table 4.10). Mohan (2016) argued that the report of the use of

performance enhancing substances by cyclists negatively astonished sponsors in Spain. It had also been postulated that in the United States, sponsors were worried about doping issues which were under investigation regarding a cycling team sponsored by US Postal Service (Engelberg, *et al.*, 2011). Messner and Reinhard (2012) indicated that sponsors in entrepreneurship, including sports could exit sponsorship due to controversial behaviours of athletes such as doping in order to safeguard the image of the promoted product. The fear to lose sponsorship in amateur football could be one of the reasons which prompted football athletes not to dope in Malawi. This implied that knowledge of the consequences of doping acted as a deterrent for football athletes.

5.7 Attitudes of Football Athletes, Coaches and Sponsors on Doping

Lazarus, *et al.*, (2010) indicated that attitude was a critical predictor for athletes in the adoption of doping. Based on results in levels of attitudes, 75.5% of participants were totally negative towards doping in football (Table 4.12). This implied that participants in our study generally had negative attitudes towards doping in Malawi. Based on the results, athletes, coaches and sponsors indicated that they did not anticipate football athletes to dope in the near future and that no athletes would be considered doping as a means to improve performance (Table 4.11). Participants in this study did not perceive anti-doping activities as a violation of rights of football players and even indicated that they did not respect doping football players. Participants also did not agree that doping football players enjoyed the game (Table 4.11). These findings were consistent with Brown, *et al.*, (2013) who asserted that athletes in Ghana were in favour of anti-doping principles in sports and believed that great athletes could be produced without using

performance enhancing drugs. Chebet, (2014) found out that athletes were strongly not in favour of doping practices in sports in Kenya. Athletes from United States were positive towards anti-doping activities and favoured testing for doping to curb the vice (Judge, Bellar, Craig, *et al.*,2015). Athletes in Malawi may have developed a negative attitude towards doping due to threats given to them by the football coaches and team doctors during training and counselling sessions.

Kisaalita and Robinson (2014), in the USA, concluded that to get the differences in attitudes of athletes about use of performance enhancing substances was one of the critical factors in the formulation of the principles of the doping drives among athletes. Sanchez, *et al.*, (2013) found out that attitude towards doping of 20.8% of cyclists in Spain were unclear as they considered doping as having no sound solution. Tahtamouni, *et al.*, (2008) study in Jordan found out that athletes showed willingness to use anabolic steroids if given a chance which was an indication of positive attitude towards doping in sports. In Queensland, Australia, both coaches and athletes demonstrated negative attitude towards use of doping substances in sports disciplines including football (Engelberge, *et al.*, 2017).

Findings in our study indicated that coaches did not consider football athletes to dope in the the future and that doping football players enjoyed the game. Sponsors also did not agree that anti-doping activities violated the right of football players and that athletes must dope to improve performance. Sponsors, further, did not respect doping football players. These results were in support of the findings of Blank, *et al.*, (2014) who

reported that in Australia, Tyrolean coaches displayed a negative attitude towards doping in sports and opted more for punishing doping athletes than sports clubs and athletes support personnel. Similar attitudes were demonstrated by coaches in Croatia who had positive views towards punishing doping athletes in sports (Sajber, Rodek, Escalante, *et al.*, 2013). Coaches in Malawi may have developed a negative attitude towards doping in football when they were active players in order to keep the reputation of their respective football clubs clean from doping scandals.

In this study, sponsors were against considering football athletes to dope in future and even that athletes must dope to improve performance. Sponsors further indicated that anti-doping activities did not violate right of players or the respect of doping football players. Also, coaches indicated that doping football players did not enjoy the game. These findings were in concurrence with Solberg, *et al.*, (2010) who found out that in Norway, sponsors of athletes/teams were against doping in sports and instituted punishments such as cutting support to athletes who failed doping tests. It has been indicated that doping defeated the purpose of sponsorship in football which included increasing awareness of the brands of sponsors during the period of sponsorship (Olsen & Simmons, 2002). Blumrodt and Kitchen, (2015) found out that sponsors in the Tour De France had anti-doping clauses in contracts with cyclists. Chien, Kelly and Weeks (2015) ascertained that sponsors would not terminate sponsorship, including that for sports, where the severity of the scandal such as doping was less lasting. As a manifest of negative attitude, doping scandals in Finland saw the association of Ski experiencing termination of sponsorship in 2005 (Sanomat, 2005). Although the findings in our study

indicated that participants had a negative attitude towards doping, the guarantee to maintain such attitude was not assured since attitude changed with age, education, experience, gender, peer pressure, knowledge and incentives. There was, therefore, a need to attach incentives for athletes that remain clean from doping in their career.

5.8 Associations between Participants' Age, Education and Experience and Their Knowledge and Attitude towards Doping

Based on the findings in this study, there were generally significant associations between demographic features of participants and their knowledge and attitude towards doping (Table 4.13). Similarly, there was also a relationship between knowledge of participants on doping substances and their attitude towards doping (Table 4.14). This could be attributed to the fact that participants were educated, were within the same age range and had almost the same period of experience in football related activities.

The findings revealed that there was a significant association between age and knowledge on doping drugs (Table 4.13). This could be the situation because participants were in the youthful age and were vigilant to find information on doping in football. These findings were in support of the study in Bosnia, where the age of athletes was significantly associated with knowledge on doping, with older athletes scoring higher than younger athletes (Corluka, *et al.*, 2011). Sabre, *et al.*, (2013), in Croatia, found out that age of athletes and coaches were significantly correlated to knowledge about doping and sports nutrition, with older coaches having more knowledge than athletes. However, in our study, there was no significant association between age of coaches and their knowledge

on doping. This and contrasted with Blank, *et al.*, (2014) who found out that age of coaches had a negative low association with knowledge on the use of performance enhancing substances in Australia. In our study, there was no significant relationship between age and reasons for doping among athletes, coaches and sponsors. This may have been attributed to the fact that the participants were middle aged and had a small age range (18-36 years), a scenario that could limit them to be divergent in their differences and commonness in knowledge on doping issues.

In this study, age significantly associated with an attitude of athletes towards use of performance enhancing substances and conformed to Kim and Kim, (2017) who found out that young athletes were more willing to get information on doping than older athletes. Seemingly, the willingness of Korean athletes to get relevant information on doping signified their negative attitude towards doping. Solberg, *et al.*, (2010) found out that age determined attitude of the respondents on doping with older respondents being more negative towards it than young respondents in Norway. In this study, there was no significant association between age of coaches as well as sponsors and attitude on doping. This situation could be a function of differences in sources of knowledge on doping and the roles of coaches and sponsors compared to athletes.

This study revealed that there was a significant association between education and the reasons for doping, consequences and attitude towards doping by participants. The variations in level of education among athletes, coaches and sponsors could be attributable to this scenario. These findings concur with Hammadi and Hunien (2013)

who found out that the education of pharmacy students athletes significantly correlated with reasons for use of performance enhancing substances by athletes in Syria. Our study found out that there was no significant association between education and knowledge of doping and reported prevalence and sources of information about doping drugs. This situation could be attributed to extreme variations in levels of education of participants with athletes having low level while coaches and sponsors having high levels. The participants in this study might not have been creative enough to use other sources of information on doping including website, research papers and books that required application of formal education.

In this study, participants relied on non-conventional means such as friends as sources of information on doping regardless of their educational status. These findings were in concurrence with Sertibas, *et al.*, (2015) and Sajber, *et al.*, (2013) who found out similar situations in Turkey and Croatia respectively. It could be argued that education was the best deterrent against the use of doping substances in sports, including football (Judge, 2015). In Saudi Arabia, demographic factors of education, age and knowledge of sanctions were significantly associated with the use of doping drugs among athletes, including footballers (Al Ghobain, *et al.*, 2016). Based on the results, knowledge obtained in formal education could be paramount in the fight against doping in Malawi. Further studies should be conducted with a focus on the role of formal education in knowledge and attitude towards doping in football.

This study revealed that there was a significant association between experience of

athletes and knowledge on doping substances, consequences, reported prevalence and attitude towards doping. The findings were consistent with Sajber, *et al.*, (2013) in Croatia who found out that experience of athletes was significantly associated with knowledge on doping. Consequently, the experience of participants did not differ much regardless of their groups. In support of these findings, Nowosielski and Swiątkowska (2007) indicated that athletes who had ten years of experience in Poland significantly showed their willingness to dope during competitive sports than those with less experience. In a related study, Al Ghobain (2016) found out that in Saudi Arabia the level of education of athletes was associated with the use of performance enhancing substances in football. Similarly, Angoorani and Halabchi (2015) reported that the experience of athletes in body building was significant in use of performance enhancing substances in Iran. In our study, there was no association between the experience of athletes, coaches and sponsors and the sources of information on doping. Hence, despite the fact that participants were experienced in football, they were not keen enough in identifying the main sources of information on doping. Malawi Anti-Doping Organisation should establish a website where athletes, coaches and sponsors can get information on doping in football.

5.9 Differences in Knowledge and Attitudes of Participants on Doping

This study revealed that there were significant differences in the reported prevalence of doping, knowledge on the use of performance enhancing substances and attitudes on doping among football athletes, coaches and sponsors (Tables 4.15 and 4.16). Athletes

had more knowledge on doping followed by sponsors and coaches were the least. This could be as a result of constant interaction among athletes, with fellow players and friends, and with the coach, which catalysed the sharing of information on doping in football. These findings were in support of the assertion that coaches were part of the synergy in the doping realms of sports. Hence, as the important source of information for athletes (Blank, *et al*, 2014) they were taken to be push factors in the experience of athletes in football (Bartholomew, Ntoumanis, & Ntoumani, 2010). It was argued that knowledge on performance enhancing substances among athletes could appropriately be attained through training, awareness and learning in the multifaceted and complex network surrounding the athletes which might influence their experiences, behaviours and knowledge.

In our study, there were significant differences between athletes and sponsors and between coaches and sponsors on the reported prevalence of doping (Tables 4.14 and 4.15). The differences in reported prevalence, knowledge and attitude towards doping could be attributed to differences in educational qualifications, experiences in football related activities and sources of information on doping. The findings of this study were in line with the argument presented by Florez (2013) that incidences of use of performance enhancing substances become a concern to sponsors since they bring negative publicity to their brands and products in sports by the changing attitudes of the consumers towards the sponsoring organisation. Manouchehri, Hamidi, Sajadi, *et al.*, (2016) stated that unacceptable behaviour, including doping, emerged in sports arenas which consequently affected sports and sponsorship. There is, therefore, need for

sponsors to have more knowledge on doping issues. Based on the findings, sponsors in Malawi were mindful of associating with football that was free from doping. Athletes and coaches seemed to have low knowledge and attitude as they seemed more interested in winning football matches and retaining high performance. However, the findings are debatable because Prinz, (2006) argued that due to gladiator effect, competition was the centre of interest for athletes regardless of the type of equipment or method used in winning.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the Findings

Participants in the study included 235 football athletes, 24 coaches and 15 sponsors. The participants were aged between 18 and 36 years. The highest and lowest levels of education of participants were Bachelor's Degree and Junior Certificate of Education, respectively. Sponsors and coaches had high levels of education in comparison to athletes. Experiences of participants in football related activities ranged between 1 year and 8 years.

The findings in this study revealed that participants had more knowledge about doping, with athletes being more knowledgeable than sponsors and coaches. There were significant differences in knowledge on doping between athletes and coaches ($p = 0.011$) and between coaches and sponsors ($p = 0.042$). Therefore, the null hypothesis that there was no significant difference in knowledge on doping among athletes, coaches and sponsors was rejected. There were also significant differences in attitude towards doping between football coaches and sponsors ($p = 0.002$). Therefore, the null hypothesis that there was no significant difference in attitudes towards doping among athletes, coaches and sponsors was rejected.

Secondly, there was a significant relationship between knowledge and attitudes towards doping among athletes, coaches and sponsors ($p = 0.001$). Consequently, the null hypothesis that there was no significant relationship between knowledge on doping and attitudes towards doping among athletes, coaches and sponsors in football in Malawi was rejected. A significant association existed between age, education and experiences in

sports related activities of athletes, coaches and sponsors and their knowledge of and attitude towards doping. Therefore, the null hypothesis that there was no significant relationship between age, education and experience of athletes, coaches and sponsors of athletes, coaches and sponsors and their attitude towards doping was rejected.

6.2 Conclusions

The study evaluated knowledge and attitudes of athletes, coaches and sponsors on doping in football in Malawi. The reported prevalence of doping was minimal among athletes. Athletes, coaches and sponsors had knowledge on doping with athletes scoring highly. The knowledge of athletes, coaches and sponsors on doping was, however, not adequate enough because some athletes, coaches and sponsors did not have sufficient knowledge of the performance enhancing drugs on the provided list. Some of these did not know some sources of information on doping drugs in football, reasons for doping by athletes and health side effects of performance enhancing drugs on athletes who used them.

It was concluded that athletes, coaches and sponsors had negative attitudes towards doping, despite the existence of some significant differences. Some athletes, coaches and sponsors showed willingness for football athletes to use performance enhancing drugs in future in order to win the competitions, to enjoy the game and gain respect. The positive attitude showed by some athletes and coaches created a fertile ground for athletes to dope in future and this could compromise the principle of fair play in football in Malawi. There were significant relationships between demographic characteristics such as age, education and experience of football athletes, coaches and sponsors and their knowledge and attitudes towards doping. Knowledge of football athletes, coaches and sponsors were

associated with their attitudes towards doping. Football athletes, coaches and sponsors had significant different knowledge and attitudes towards doping. These were associated with their demographic traits of age, level of education and experience in football related activities in Malawi.

6.3 Recommendations on Practice, Policy and Further Research

Based on the conclusions of this study, the following recommendations were made.

6.3.1 Recommendation for Practice

It is important for athletes, coaches and sponsors to collaborate on programmes on anti-doping for them to have appropriate and sufficient knowledge.

MADO has to provide the best practices; including training which sports organizations should follow in the fight against doping in Malawi.

MADO needs to establish a website where athletes and other stakeholders can find information on doping.

FAM, in collaboration with MADO, should have programmes that will educate athletes on doping procedures and doping control practices.

There is need for MADO to embark on the deliberate testing programme for athletes in football.

6.3.2 Recommendations for Policy Formulation

Malawi Government should formulate deliberate policy that will be used in the fight against doping among athletes, through formal education systems, training of sports personnel, public awareness and criminalization of the doping acts in sports.

The football sponsors in Malawi need to consider including doping funds in sponsorships for the fight against doping to succeed.

The Malawi Government should strengthen Malawi Anti-Doping Organisation through a parliamentary Act that will enhance fighting against doping in sports.

Malawi Government should formulate a policy that will facilitate capacity development of doping controlling officers for MADO.

6.3.3 Recommendations for Further Research

Further studies should be conducted on knowledge on doping based on gender and coaching qualifications in football in Malawi.

Further research should be conducted on perceptions of Athlete Sports Personnel including parents, team managers and physicians on doping in football in Malawi.

Further research should be carried out on the socioeconomic effects of doping on amateur football athletes and clubs in Malawi.

Finally, studies should be conducted on knowledge and attitude towards doping of football athletes and coaches at tertiary and secondary school levels in Malawi.

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APPENDICES**APPENDIX 1: PARTICIPANTS STATEMENT, CONSENT AND REVOCATION
FORMS****Knowledge and Attitude of Football Athletes, Coaches and Sponsors on Doping in
Blantyre and Lilongwe, Malawi**

My name is John Mpondova Chilima Kaoche. I am a student at Kenyatta University studying Master of Science in Recreation and Sports Management. I am conducting a study on “Knowledge and Attitude of Doping by Amateur Football Athletes, Coaches and Sponsors in Blantyre and Lilongwe, Malawi.” The information will be used for academic purposes in fulfillment of the requirements for Masters of Science in Recreation and Sports Management at Kenyatta University, Kenya apart from improving ways of disseminating information on doping in amateur football and entire sports disciplines in Malawi.

1. Procedures to be Followed

Participation in this study will require you to answer some questions by filling sections A, B, C and D of the questionnaire. There will be **NO** specimens to be taken from the participants and **NO** names will be written on the questionnaire.

You have the right to refuse participation in this study. You will get the same consideration and treatment by the authorities of your organisation or football club, whether you agree to join the study or not and your decision will not change.

Please remember the participation in this study is voluntary. You may ask questions related to the study at any time.

You may willingly not respond to any questions and you can set-up an interview at any time. You may also stop being in the study at any time without affecting the services you will receive from the authorities of your organisation or football club now or in future.

2. Discomforts and Risks

Some of the questions are on intimate subject and may be embarrassing or make you uncomfortable. If this happens, you may decline to answer them if you so choose or stop the exercise at any time. The interview may take 10 minutes before you proceed with your routine activities.

3. Benefits

If you participate in this study, you will help us to devise the best approach on how to effectively disseminate information on doping in football in Malawi. You will also benefit from the study by knowing some of the doping drugs on the list in order to develop the correct attitude towards them.

4. Reward

If you agree to participate in this study dinner will be provided.

5. Confidentiality

You will fill the questionnaire by yourself without consulting anybody and your name shall not be indicated anywhere. The questionnaires will bear **NO** names of participants but will be coded using numbers and kept in a locked cabinet for private and safe keeping by the researcher.

6. Contact Information

If you have any questions you may contact the following:

Prof. E. Gitonga, (Supervisor 1) on +254727649790 (Kenyatta University, Kenya). Dr. J. Kamenju, (Supervisor 2) on +254722782868 (University of Nairobi, Kenya).The

Kenyatta University Ethical Review Committee Secretariat at the address below

The Chairperson, Kenyatta University Ethical Review Committee,

Post Office Box 43844-00100,

Thika Road,

Nairobi, Kenya.

Email addresses: chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke,

secretariat.kuerc@ku.ac.ke

John Mpondova Chilima Kaoche

Ministry of Labour, Youth, Sports and Manpower Development

Private Bag, 344, Lilongwe 3

Cell +265999456121: Email to: jkmpondova@gmail.com

7. Participant's Statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction.

My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will still get the same consideration and care whether I decide to leave the study or not and my decision will not change the consideration and care that I will receive from the authorities today and any other time.

Name of Participant.....

Signature or Thumbprint

Date

8. Investigators Statement

I, the undersigned, have explained to the volunteer in a language she/he understands, the procedures to be followed in the study and the risks and benefits involved

Name of Interviewer.....

Signature or Thumbprint

Date

APPENDIX 2: QUESTIONNAIRES**Prevalence, Knowledge and Attitudes of Athletes, Coaches and Sponsors in Malawi**

Thank you for taking part in this Survey.

My name is John Mpondova Chilima Kaoche. I am a Master's Degree student at Kenyatta University, currently undertaking a research for the fulfillment of the requirements of the degree. I am conducting this research in an effort to provide information that can be used in fighting against doping in Malawi.

I need to find out what you know and think and perceive about doping in sports. So, kindly complete this questionnaire by responding to the questions and return it to the researcher or assistant researcher. Please be assured that your responses will remain confidential between you and the researcher and that nothing that appears in the final report will be attributed to any individual respondent.

May I proceed?

(A) Questionnaire for Athletes**Survey on Reported Cases of Doping, Knowledge and Attitudes of Football Athletes, Coaches and Sponsors on Doping in Malawi****Instructions**

Please take your time to frankly and carefully answer the following questions, by filling the gaps or ticking the appropriate option – please respond to all questions: Note: participation in this study is voluntary and **NO** name is required.

PART A: Personal Information		
1	How old are you?
2	What is your highest level of formal education?	<input type="checkbox"/> JCE <input type="checkbox"/> MSCE <input type="checkbox"/> Diploma
3	For how many years have you played amateur football?	<input type="checkbox"/> 0-3 <input type="checkbox"/> 4-7 <input type="checkbox"/> 8+
PART B: Knowledge on Doping in Football		
This section seeks to get information on your knowledge on doping in amateur football. Kindly respond to the items by ticking the options available.		
i. Are the following substances on list of doping/performance-enhancing drugs?		
4	Amino acids (AAs)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
5	Anabolic (masculine) steroids	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
6	Diuretics	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
7	Growth hormone	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
8	Energy drinks	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
9	Narcotics	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
10	Stimulants (such as amphetamine)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
11	Vitamins	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
12	β -blockers	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
Sources of Information on Doping in Football		

This section seeks to get information on your sources of knowledge on doping in amateur football. Kindly respond to the items by ticking the options available.		
ii. Where do you get information on doping/use of performance enhancing drugs in amateur football?		
13	Coach	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
14	Team Doctor	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
15	Media	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
16	Friends	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
17	Fellow Players	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
18	Seminars	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
Reasons for Doping		
This section seeks to get information on your knowledge on reasons for doping in football. Kindly respond to the items by ticking the options available.		
iii. The following are reasons for football players to use performance enhancing substances		
19	Changing body shape	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
20	Building a muscle mass within a short period of time	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
21	Winning the competition	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
22	Achieving the desired physical capabilities	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
23	Merely imitating other football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
Consequences of Use of Performance Enhancing Substances		
This section seeks to get information on your knowledge on effects of doping in football. Kindly respond to the items by ticking the options available.		
iv. Do you agree with the following statements? Use of performance enhancing drugs		
24	Has side effects on health of football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
25	Violates the rule of fair play in football sport	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
26	Is cheating in football	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

27	Leads to sanction against a player once tested positive	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
PART C: Reported Cases of Doping /Use of Performance Enhancing Substances		
This section seeks to get information on prevalence of doping in football. Kindly respond to the items by ticking the options available.		
Tick where Appropriate		
28	Have you ever been tested for doping (If no, go to question 33)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
29	How many times	<input type="checkbox"/> Once <input type="checkbox"/> %Twice <input type="checkbox"/> Thrice
30	What were the results of your tests?	<input type="checkbox"/> Pos <input type="checkbox"/> Not Sure <input type="checkbox"/> Neg
31	Have you ever used substances to enhance performance	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
32	Do you know any football player who uses performance enhancing drugs?	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
PART D: Attitude on Doping/ Use of Performance Enhancing Substances		
This section seeks to get information on your attitudes towards doping in football. Kindly respond to the items by ticking the options available.		
i. Do you agree with the statements below?		
33	I respect football players who use doping	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
34	Football doping players enjoy the games	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
35	Anti-doping activities violate the rights of football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
36	I consider to dope in the near future	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
37	Football players must dope to improve performance	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

(B) Questionnaire for Coaches**Survey on Reported Cases of Doping, Knowledge and Attitudes of Football Coaches and Sponsors on Doping in Blantyre and Lilongwe Urban, Malawi****Instructions**

Please take your time to frankly and carefully answer the following questions, by filling the gaps or ticking the appropriate option – please respond to all questions: Note: participation in this study is voluntary and **NO** name is required.

PART A: Personal Information		
1	How old are you?
2	What is your highest level of formal education?	<input type="checkbox"/> JCE <input type="checkbox"/> MSCE <input type="checkbox"/> Diploma <input type="checkbox"/> 1 st Degree
3	For how long have you coached the football club?Years
PART B: Knowledge on Doping in Football		
This section seeks to get information on your knowledge on doping in football. Kindly respond to the items by ticking the options available.		
i. Are the following substances on list of doping/performance-enhancing drugs?		
4	Amino acids (AAs)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
5	Anabolic (masculine) Steroids	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
6	Diuretics	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
7	Growth hormone	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
8	Energy drinks	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
9	Narcotics	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
10	Stimulants (such as amphetamine)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
11	Vitamins	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
12	β -blockers	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

Sources of Information on Doping in Football		
This section seeks to get information on your sources of information on doping in football. Kindly respond to the items by ticking the options available.		
ii. Where do you get information on doping/use of performance drugs in football?		
13	Seminars	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
14	Team Doctor	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
15	media	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
16	Friends	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
19	Fellow coaches	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
18	Players	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
Reasons for Doping		
This section seeks to get information on your knowledge on reasons for doping in football. Kindly respond to the items by ticking the options available.		
iii. The following are reasons for amateur football players to use performance enhancing drugs		
19	Changing body shape	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
20	Building a muscle mass within a short period of time	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
21	Winning the competition	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
22	Achieving the desired physical capabilities	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
23	Merely imitating other football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
Consequences of Use of Performance Enhancing Substances		
This section seeks to get information on your knowledge on effects of doping in football. Kindly respond to the items by ticking the options available.		
iv. Do you agree with the following statements? Use of performance enhancing drugs:		
24	Has side effects on health of football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
25	Violates the rule of fair play in football sport	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
26	Is cheating in football	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

27	Leads to sanction against a player/team if tested positive	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
PART C: Reported Cases of Doping/Use of Performance Enhancing Substances		
This section seeks to get information on prevalence of doping in football. Kindly respond to the items by ticking the options available.		
	Tick where appropriate	
28	Have your players ever been tested of doping (If no, go to question 33)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
29	How many times	<input type="checkbox"/> Once <input type="checkbox"/> Twice <input type="checkbox"/> Thrice
30	What were the results of the players' tests?	<input type="checkbox"/> Pos <input type="checkbox"/> Not Sure <input type="checkbox"/> Neg.
31	Have your players ever used substances to enhance performance	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
32	Do you know any football player who uses performance enhancing drugs?	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
PART D: Attitude on Doping/ Use of Performance Enhancing Substances		
This section seeks to get information on your attitudes towards doping in football. Kindly respond to the items by ticking the options available.		
i. Do you agree with the statements below?		
33	I respect the football players who use doping.	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
34	Football doping players enjoy the games	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
35	Anti-doping activities violate the rights of football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
36	I consider my football players to dope in the near future	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
37	Football players must dope to improve performance	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

(C) Questionnaire for Representatives of Sponsors**Survey on Reported Cases of Doping, Knowledge and Attitudes of Football****Sponsors on Doping in Malawi****Instructions**

Please take your time to frankly and carefully answer the following questions, by filling the gaps or ticking the appropriate option – please respond to all questions: Note: participation in this study is voluntary and **NO** name is required.

PART A: Personal Information		
1	How old are you? Years
2	What is your highest level of formal education?	<input type="checkbox"/> Dip. <input type="checkbox"/> 1st Degree. <input type="checkbox"/> Masters
3	For how long have you sponsored football activities? Years
PART B: Knowledge on Doping in Football		
This section seeks to get information on your knowledge on doping in football. Kindly respond to the items by ticking the options available.		
i. Are the following substances on list of doping/performance-enhancing drugs?		
4	Amino acids (AAs)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
5	Anabolic (masculine) steroids	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
6	Diuretics	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
7	Growth hormone	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
8	Energy drinks	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
9	Narcotics	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
10	Stimulants (such as amphetamine)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
11	Vitamins	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
12	β -blockers	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
Sources of Information on Doping in Football		

This section seeks to get information on your sources of knowledge on doping in football. Kindly respond to the items by ticking the options available.		
ii. Where do you get information on doping/use of performance enhancing substances in football?		
13	Seminars	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
14	Team Doctor	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
15	Media	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
16	Friends	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
17	Fellow workers	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
18	Coaches	Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No <input type="checkbox"/>
Reasons for Doping		
This section seeks to get information on your knowledge on reasons for doping in football. Kindly respond to the items by ticking the options available.		
iii. The following are reasons for football players to use performance enhancing substances		
19	Changing body shape	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
20	Building a muscle mass within a short period of time	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
21	Winning the competition	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
22	Achieving the desired physical capabilities	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
23	Merely imitating other football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
Consequences of Use of Performance Enhancing Substances		
This section seeks to get information on your knowledge on effects of doping in football. Kindly respond to the items by ticking the options available.		
iv. Do you agree with the following statements? Use of performance enhancing drugs:		
24	Has side effects on health of football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
25	Violates the rule of fair play in football sport	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
26	Is cheating in football	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

27	Leads to sanction against a player/team if tested positive	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
PART C: Reported Cases of Doping /Use of Performance Enhancing Substances		
This section seeks to get information on prevalence of doping in football. Kindly respond to the items by ticking the options available		
Tick where Appropriate		
28	Have the players ever been tested of doping (If no go to question 33)	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
29	How many times	<input type="checkbox"/> Once <input type="checkbox"/> Twice <input type="checkbox"/> Thrice
30	What were the results of the players' tests?	<input type="checkbox"/> Pos <input type="checkbox"/> Not Sure <input type="checkbox"/> Neg
31	Have the players ever used substances to enhance performance	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
32	Do you know any football player who uses performance enhancing drugs?	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
PART C: Attitude on Doping/ Use of Performance Enhancing Substances		
This section seeks to get information on your attitudes towards doping in football. Kindly respond to the items by ticking the options available.		
i. Do you agree with the statements below?		
33	I respect football players who use doping	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
34	Football doping players enjoy the games	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
35	Anti-doping activities violate the rights of football players	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
36	I consider my football players to dope in the near future	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No
37	Football players must dope to improve performance	<input type="checkbox"/> Yes <input type="checkbox"/> Not Sure <input type="checkbox"/> No

APPENDIX 3: MAP OF MALAWI SHOWING AREAS OF STUDY

Figure 3.1 Showing Map of Malawi with Blantyre and Lilongwe Cities as Areas of Study

(Geospatial Information Section, 2012; Zulu, Ciera, Musila, *et al.*, 2012).

**APPENDIX 4: A LETTER OF APPROVAL FROM KENYATTA UNIVERSITY
GRADUATE SCHOOL**



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

P.O. Box 43844, 00100

Website: www.ku.ac.ke

NAIROBI, KENYA

Tel. 020-8704150

Internal Memo

FROM: Dean, Graduate School

DATE: 24th May, 2017

TO: John Mpondova Chilima Kaoche
C/o Recreation Management and Exercise
Department.

REF: H108F/29581/2014

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

=====

This is to inform you that Graduate School Board, at its meeting of 17th May, 2017, approved your Research Proposal for the M.Sc. Degree entitled "Knowledge and Attitudes of Doping by Amateur Football Athletes, Coaches and Sponsors in Blantyre and Lilongwe, Malawi".

You may now proceed with your Data collection, subject to clearance with the Director, Ethics Office, Kenyatta University and the Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

JACKSON LUVUSI
FOR: DEAN, GRADUATE SCHOOL



CC. Chairman, Recreation Management and Exercise Science Department

Supervisors:

1. Dr. Elijah Gitonga Rintaugu
Department of Recreation Management and Exercise Science
Kenyatta University
2. Dr. Janet Kamenju
Department of Physical Education and Sports
University of Nairobi
C/o Department of Recreation Management and Exercise Science
Kenyatta University

JL/rwm

**APPENDIX 5: LETTER OF CLEARANCE FROM KENYATTA ETHICAL
REVIEW COMMITTEE**



**KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE**

Fax: 8711242/8711575
 Email: kuerc.chairman@ku.ac.ke
kuerc.secretary@ku.ac.ke
secretariat.kuerc@ku.ac.ke
 Website: www.ku.ac.ke

P. O. Box 43844,
 Nairobi, 00100

Tel: 8710901/12

Our Ref: KU/ERC/APPROVAL/VOL.1 (74)

Date: 20th June, 2017

JOHN MPONDOVA CHILIMA KAOCHE
 Kenyatta University
 P.O Box 438444-00100
 Nairobi.

Dear John,

**APPLICATION PKU/694/I768 "KNOWLEDGE AND ATTITUDES OF DOPING BY
 AMATEUR FOOTBALL ATHLETES, COACHES AND SPONSORS IN BLANTYRE AND
 LILONGWE MALAWI."**

IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic Application Number:
 "PKU/666/I744 "Knowledge and Attitudes of Doping by Amateur Football Athletes, Coaches and
 Sponsors in Blantyre and Lilongwe Malawi." Received on 30th May 2017 and discussed on 13th
 June 2017.

1. APPLICANT

John Mpondova Chilima Kaoche

2. SITE

Blantyre and Lilongwe Malawi

3. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University
 Research Policy (Section 7.2.1.3) and the Kenyatta University Review Committee Guidelines
**AND APPROVED that the research may proceed for a period of ONE year from 20th June,
 2017.**

ADVICE/CONDITIONS

- i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.
- ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
- iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
- iv. Submit an electronic copy of the protocol to KUERC.

**When replying, kindly quote the application number above.
 If you accept the decision reached and advice and conditions given please sign in the space
 Provided below and return to KU-ERC a copy of the letter.**


[Handwritten signature]
 21 JUN 2017
 ETHICS REVIEW COMMITTEE
 BOX 43644 - 00100 NAIROBI

**DR. TITUS KAHIGA,
 CHAIRMAN ETHICS REVIEW COMMITTEE**

I JOHN MPOABOYA CILILIMA KACHE accept the advice given and will fulfill the conditions therein.

Signature *[Handwritten signature]* Dated this day of 21:06:2017 2017.

**APPENDIX 6: LETTER OF CLEARANCE FROM THE MINISTRY OF
LABOUR, YOUTH, SPORTS AND MANPOWER DEVELOPMENT, MALAWI.**

Telephone:	(265) 01 788 755		MINISTRY OF LABOUR, YOUTH, SPORTS AND MANPOWER DEVELOPMENT PRIVATE BAG 344 CAPITAL CITY LILONGWE 3 MALAWI
Telegrams:			
Fax :	(265) 01 773 277		
e-mail :	labour@malawi.gov.mw		

REF. NO. MHQ/S/04/5 3rd October, 2017

The General Secretary
Football Association of Malawi
P.O. Box 865
BLANTYRE

Dear Sir,

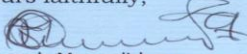
**DATA COLLECTION FOR ACADEMIC PURPOSES FROM SUPER
LEAGUE FOOTBALL CLUBS IN MALAWI**

This is to inform you that the bearer of this letter, Mr. John M.C. Kaoche, one of our Principal Sports Officers in the Ministry is currently pursuing a Master's Degree in Recreation and Sports Management at Kenyatta University, in Kenya.

As a requirement to qualify for the award of his certificate, Mr. Kaoche is expected to collect data on knowledge and attitudes on doping of amateur football athletes, coaches and their sponsors in Malawi from the following Super League Football Clubs:

1. Nyasa Bullets F.C.	6. Silver Strikers.
2. Be Forward Wanderers.	7. CIVO United.
3. Azam Tigers.	8. Blue Eagles.
4. Wizards.	9. Kamuzu Barracks.
5. Blantyre United.	10. Master Security.

I will be grateful for your assistance to him.

Yours faithfully,

Joseph Mwandidya
**ACTING SECRETARY FOR LABOUR, YOUTH,
SPORTS AND MANPOWER DEVELOPMENT**

**APPENDIX 7: LETTER OF CLEARANCE FROM THE FOOTBALL
ASSOCIATION OF MALAWI**



FOOTBALL ASSOCIATION OF MALAWI

Ng'ong Village
Chisumbwa
P.O. Box 11457, Limbe
Bantwe, MALAWI

Phone: +265 (0) 111 424 544
Fax: +265 (0) 1 842 204
Email: gsa@fam.mw
Website: www.fam.mw

FAM/GS/SLC 001.17

13th November, 2017

The General Secretaries
Super League of Malawi Clubs

Dear Sir,

RE: DATA COLLECTION FOR ACADEMIC PURPOSES

The subject above refers.

I write to introduce to you Mr. John M.C. Kaoche, currently pursuing a Masters degree in Recreation and Sports Management at Kenyatta University in Kenya.

He will collect data on knowledge and attitudes on doping of amateur football athletes, coaches and their sponsors in Malawi.

I would like to request your good office to grant him permission to collect the data at your club.

Kindly assist Mr. John M.C. Kaoche in his research.

Yours faithfully,



Alfred Gift Gunda
GENERAL SECRETARY
FOOTBALL ASSOCIATION OF MALAWI

Cc : General Secretary - SULOM

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