

**UNIVERSITY OF NAIROBI**

**PERCEPTIONS ON THE USE OF PERFORMANCE ENHANCING DRUGS BY  
ATHLETES IN SELECTED COUNTIES OF NORTH RIFT, KENYA.**

**SARAH C. KOSKE**

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## DECLARATION

I hereby declare that this Research Project is my original work and has not been presented for an award of a degree in any other University.

**Name:** Sarah Chebet Koske

**Signature:** \_\_\_\_\_ **Date** \_\_\_\_\_

This research project has been submitted for examination with my approval as the University Supervisor

**Name:** Dr. James Kariuki

**Signature:** \_\_\_\_\_ **Date** \_\_\_\_\_

## **DEDICATION**

This Research Project is dedicated to my entire family. My late Dad and Mom for their selfless parenting and godly upbringing. My spouse for the challenging disposition without which I could not have embarked on this project. My children who motivate me and are the reason why life makes a real meaning. I challenge them to surpass the benchmark set before them. I wish to let them know that with hard work and trust in the Almighty God, they can achieve everything they target to achieve.

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# TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENTS .....	iv
TABLE OF CONTENTS .....	v
LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
LIST OF ABBREVIATIONS .....	x
ABSTRACT .....	xi
CHAPTER 1 .....	1
INTRODUCTION .....	1
1.1 Background to the Study .....	1
1.2 Statement of the Problem .....	6
1.3 Research Questions .....	8
Objectives of the Study .....	8
Specific Objectives of the Study .....	8
1.4 Significance of the Study .....	8
1.5 Scope and Limitations of the Study .....	9
1.6 Assumptions of the Study .....	10
CHAPTER 2 .....	11
LITERATURE REVIEW AND THEORETICAL FRAMEWORK .....	11
2.1 Literature Review .....	11
2.1.1 History of Doping .....	11
2.1.2 Basis of Doping .....	12
2.1.3 Cases of Kenyan Athletes Implicated in Doping .....	14
2.1.4 Perception of Doping Behavior .....	15
2.1.5 Emergence of Professional Athletes .....	19
2.1.6 Effect of Athlete’s Migration to Other Nations .....	19
2.1.7 Use of Recreational Drugs .....	21
2.1.8 Use of Traditional & Herbal Medicines .....	22
2.2 Commonly Abused Substances and Methods .....	24
2.2.1 Anabolic Steroids .....	24

2.2.2 Blood Doping.....	24
2.2.3 Gene Doping .....	25
2.2.4 Stimulants .....	26
2.2.5 Beta -2 Agonists.....	26
2.3 Drugs and Substance use by Athletes in Sports.....	27
2.3.1 Athletes’ Competition Experience and Substance use in Sports .....	30
2.3.2 Performance Enhancing Substance use by Gender.....	31
2.3.3 Performance-Enhancing Substance use by Type of Sport.....	35
2.3.4 Doping Awareness .....	37
2.3.5 Attitude to Doping .....	38
2.3.6 Ethical and Social effects of Doping .....	42
2.3.7 Psychological Effects of Doping .....	43
2.3.8 Motivational Factors .....	44
2.4 Theoretical Framework.....	45
2.4.1 Theory of Planned Behavior .....	45
2.4.2 Deterrence Theory .....	47
2.5 Conceptual Framework.....	50
CHAPTER 3 .....	52
RESEARCH METHODOLOGY.....	52
3.1 Research Design.....	52
3.2 Unit of Analysis and Unit of Observation .....	52
3.4 Location of the study .....	53
3.5 Target Population.....	53
3.6 Sample Size and Sampling Technique.....	54
3.7 Research Instruments .....	54
3.8 Validity and Reliability of Research Instrument .....	55
3.9 Data Collection Procedure .....	55
3.10 Data Management and Analysis .....	56
3.11 Logistical and Ethical Considerations .....	56
CHAPTER 4 .....	57
DATA ANALYSIS, PRESENTATION AND INTERPRETATION .....	57
4.1 Introduction.....	57

4.2 Response Rate.....	57
4.3 Demographic Information.....	58
4.3.1 Age Brackets of the Respondents .....	59
4.3.2 Gender of the Respondents .....	59
4.3.3 Time of Joining Competitive Athletics.....	60
4.3.4 Major Athletic Discipline .....	61
4.4 Assessment of Attitude of Athletes towards Performance Enhancing Drugs.....	61
4.5 Knowledge of Performance enhancing drugs and Testing procedures.....	63
4.6 Factors that Influence Use of Performance Enhancing Drugs among Athletes.....	65
4.7 Assessment of Doping Practices Among Athletes.....	67
4.8 Athlete’s Recommendations .....	69
4.9 Key informants.....	70
CHAPTER 5 .....	73
SUMMARY, CONCLUSION AND RECOMMENDATIONS.....	73
5.1 Introduction.....	73
5.2 Summary of Findings.....	73
5.3 Conclusion .....	75
5.4 Recommendations.....	76
REFERENCES .....	77
APPENDICES .....	81
QUESTIONNAIRE .....	81
KEY INFORMANTS GUIDE.....	87

## LIST OF TABLES

Table 4.1: Questionnaire Response Rate .....	57
Table 4.2: Age Brackets of the Respondents .....	59
Table 4.3: Gender of the Respondents .....	60
Table 4.4: Respondents' Time of Joining Competitive Athletics.....	60
Table 4.5: Agreement with Statements on performance enhancing drugs .....	62
Table 4.6: Agreements with statement on knowledge of PEDs among Athletes .....	64
Table 4.7: Factors that Influence use of PEDs among Athletes in Kenya.....	66
Table 4.8: Assessment of Doping Practices among Athletes .....	68



## **LIST OF FIGURES**

Figure 2.1: Conceptual Framework .....	50
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## **LIST OF ABBREVIATIONS**

AAS	Anabolic-Androgenic Steroid
ADAK	Anti-Doping Agency of Kenya
AK	Athletics Kenya
DSDM	Drugs in Sports Deterrence Model
EPO	Erythropoietin
IAAF	International Amateur Athletic Federation
IOC	International Olympic Committee
NACADA	National Authority for Campaign Against Alcohol and Drug Abuse
NOC	National Olympic Committee
PEAS	Performance Enhancement Attitude Scale
PEDs	Performance Enhancing Drugs
PES	Performance Enhancing Substances
RADO	Regional Anti-Doping Organization
TPB	Theory of Planned Behaviour
TUE	Therapeutic Use Exemption
WADA	World Anti-Doping Agency
WADC	World Anti-Doping Code

## ABSTRACT

Some Kenyan athletes have tested positive for medicinal, recreational or prohibited substances that are in the Prohibited list of World Anti-doping Agency. Depending on the nature of their violation, these athletes have been banned from participating in their sport either for a period or even for life. The purpose of this study was to understand perceptions on the use of performance enhancing drugs by athletes in selected counties of North Rift, Kenya. The specific objectives of the study were; to examine the attitude of North Rift athletes towards use of performance enhancing drugs, to determine the knowledge of performance enhancing drugs among the athletes, to establish factors that influence the practice of doping and to establish possible practice of doping among the athletes in this region. The research used survey design to investigate the problem. A questionnaire was used to measure the questions that were put forward. On assessment of attitude towards use of PEDs, 19.2% strongly agreed that athletes don't have other sources of income except in sports so they must perform. On knowledge of PEDs, only 6.2% strongly agree that they can be tested anywhere and at any time. On factors influencing use of PEDs, 50% believe that not everyone gets tested so they could escape and win a prize. The study concludes that lack of knowledge of prohibited substances, the urgent need of money and success, the need to alleviate poverty and pressure to perform are all key aspects that contribute to doping among athletes.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background to the Study

Performance enhancing drugs in sports can be traced to the original Olympic Games between 776 B.C to 393 B.C. The origin of the word ‘doping’ is attributed to the Dutch word ‘doop’, which is a viscous opium Juice, the ancient drug of choice, Greeks & Bowers, (1998). The ancient Olympic champions were professionals who competed for huge cash prizes as well as wreaths. Most forms of what we call cheating currently were perfectly acceptable to the Greeks then. It is said that the Greeks experimented on with herbal medications in an effort to enhance their performances. They also drank wine potions, used hallucinogens and ate animal hearts or testicles in search of potency, Jenkins S. (2007).

According to Murray, T. H. (1983), the modern use of drugs in sports began in the late nineteenth century, with preparations made from coca leaf, the source of cocaine and related alkaloids. Vin Mariani, a widely used mixture of coca leaf extract and wine, was even called ‘the wine of athletes.’ It was mainly used by French Cyclists. Coca and Cocaine were popular because they staved off the sense of fatigue and hunger brought on by prolonged exertion. In 1904, Olympics marathon runner, Thomas Hicks, used a mixture brandy and strychnine (a stimulant that is fatal in high doses) and nearly died. Mixtures of strychnine heroin, cocaine, and caffeine were used widely by athletes and each coach or team developed its own unique secret formulae, Marks. Gold, MD. (1992).

A review of sports history reveals that drugs and sports have gone hand in hand for centuries, and surprisingly, drugs have only been banned from the Olympic Games since

1968, Ivan W. (2000). He says that performance enhancing drugs have been used by people involved in sports and sport-like activities for some 2000 years, but it's only recently, since introduction of Anti-doping regulations and doping controls from the 1960s, that it has been regarded unacceptable. The shift from tolerating doping in sports to the testing athletes and ostracizing drug cheats has been driven by certain factors. These include technological advances in performance-enhancing drugs, beginning the 1950s, that have bolstered the contention that drug use threatens the integrity of sports. Another reason behind the shift has been to deter athletes from using illicit substances with unknown health effects.

The first indication that athletes were using steroids was during 1956 World Games in Moscow, Russia, Robert Voy., (1991). It was observed that Soviet athletes were using urinary catheters because steroids had enlarged their prostrates to the point where urination was difficult. The other argument put forth by athletes is that elite sporting events are demanding that competing in them necessitates drug use. They contend that without drugs like EPO, which enhances athletic endurance by boosting the amount of oxygen in the blood, competing in the Tour de France would be impossible as revealed by Tour de France riders. Nicolas Aubier, a former French professional cyclist, explains that the rationale behind drug use is "to be honest, I don't think it is possible to make the top 100 on the ranking list without taking EPO, growth hormone or some of the other stuff."

Professional and elite athletes who use performance-enhancing drugs are typically adults. However, use of these drugs, are also prevalent among adolescents though for them, it is not just for performance but also for physical appearance. Until the mid-1970s, knowledge about adolescent's use of performance enhancing drugs was based on anecdotes and

rumors. Survey done suggests that adolescents use drugs in an effort to improve athletic performance and physical appearance. These drugs include Caffeine, Amphetamines, Human Growth Hormone, Erythropoietin, Creatine and AAS, Yesalis & Barkhe, (2000).

Kenya is well known for the prowess its runners showcase on the field and track events and particularly middle and long-distance races. Kenya's performance in marathon, cross country, middle and long- distance races has put it in the limelight of the world. This performance in athletics can be traced to 1964 when Kenya won its first Olympic medal through Wilson Kiprugut, Bale & Sang, (1996). In 1968, Kenya won its first gold medal and by 1972, it made remarkable mark in athletics after winning the men's 4x400m relay. In the 1988 Seoul Olympics, Kenya won four gold medals which was a remarkable performance. The same great performance was repeated in the 2008 Beijing Olympics where Kenya won 6 gold, 4 silver and four bronze medals, all in middle and long- distance racing, IAAF, (2011). Kenyan athletes have not only excelled in track athletics but also in cross country and marathon, both at senior and junior levels, IAAF, (2011).

In 2010, Kenya swept the IAAF World Cross Country Championship taking all the individual and team titles. Kenyan women have also done very well in races. In 2011 during the World Champion Series, the Kenyan women took the top three positions in Marathon and 10,000 meters. At regional level, Kenya has swooped nearly all medals on offer in three distinct series of the African Cross-Country Championships, the 2011, 2012 and 2014 series, IAAF, (2014). Kenya performed very well in 2013 World Athletics Championship with five gold medals.

Scholars have tried to establish the reasons behind Kenya's performance in the middle and long-distance racing, Hamilton, (2000), (Scotts & Pitsilladis, (2007), Onywera, (2009), and

Elbe, Madsen & Midtgard 2010). Among the factors that have been explored are diet and lifestyle, genetic predisposition, environmental influence and motivational factors. Scotts and Pitsiladis, (2007), conducted a study to ascertain the assumptions that Kenya's dominance in middle and long-distance running could be as a result of genetic makeup. However, findings of the research did not indicate any specific genetic makeup that could be attributed to excellence in running. A study conducted by Onywera, (2009), sought to establish the role of geographical location and environmental influence on sport performance. The study highlighted the importance of environmental and social factors as contributing to success of Kenyan runners in athletics. The role of motivational factors as a possible reason for Kenyan success in athletics has been investigated in two studies.

A study conducted by Elbe et al., (2010), established that Kenyan runners are motivated by extrinsic reasons compared to their Danish counterparts who were also involved in the study. This opinion is supported by the findings of a study by Onywera, Scott, Boit & Pitsiladis, (2006), which demonstrated that majority of Kenyan runners were motivated by financial reasons. A recent study, also conducted by Onywera, (2009), sought to establish the foundations of Kenya's running dominance, particularly the role of diet and lifestyle, talent identification and injury management. The study established that Kenyan athletes have benefited more from use of readily available equipment and amenities within their environment than use of technology.

All the above studies have explored possible reasons for Kenyan success in athletics, but none has explored their perception of use of performance enhancing drugs. Several gaps have been identified by observers and journalist among them with regard to implementation of World Anti-Doping Agency (WADA) regulations. Among the gaps is

the fact that a number of Kenyan athletes have tested positive for prescription drugs that are prohibited or have been consumed above the levels expected for the treatment of ailments. Some examples include Cosmas Ndeti and William Tanui who tested positive for ephedrine and claimed to have taken it over the counter as cold remedy, (Manners, 1997). Another gap that has been evident in the implementation of doping regulations in Kenya is the occurrence of an incident where a Kenyan athlete refused to provide samples for testing, and that portrays ignorance of international testing procedures.

John Ngugi was banned for four years for refusing to provide a sample for testing, Luhtala, (2002). However, the four- year ban was later reduced after an appeal. This raises queries on athletes' awareness about doping procedures. Studies conducted on Kenyan athletes have also raised similar concerns on Kenyan athlete's awareness of what is prohibited by the World Anti-Doping Agency, Kimiywe & Simiyu, (2009), Otieno & Offula, (2009). The studies reveal wide use of recreational drugs, herbal medicine and dietary supplements by Kenyan sportsmen and women. A study conducted by Kimiywe et al (2009), indicated that Kenyan rugby players have limited knowledge of use of dietary supplements though they rampantly used it. Another study conducted by Onywera et al., (2006), which investigated diet and lifestyle of Kenyan runners revealed that Kenya runners still value traditional food types and medicine. There is no evidence of the athletes' awareness of the risk of using traditional diet and medicine with regard to doping.

A study conducted by Otieno and Ofulla, (2009), on recreational drug use in western Kenya indicated rampant abuse of alcohol (57.9%), tobacco (34.7%) and cannabis (18.3%) and khat (23.1%) by its respondents. The study further showed that the users had very scanty knowledge of effects of the drugs. Research has shown that a number of supplements



available in many countries contain banned substances such as stimulants, hormones and prohormones. Two studies by Schanzer, (2002), & Geyer, (2004), confirmed these claims. The World Anti-Doping Agency (WADA) uses its website as a main tool of disseminating information to athletes and other stakeholders. Recent studies have portrayed internet access in Kenya as being generally very low Ochara, (2008), Kamau & Ouma, (2008), Gituma et al., (2009). This casts doubts as to whether Kenyan athletes have adequate access to information disseminated by WADA. It is not clear whether there is disparity in knowledge of doping between male and female athletes both at junior and senior categories since no study has been conducted on the same.

## **1.2 Statement of the Problem**

Some Kenyan athletes have tested positive for medicinal or recreational drugs prohibited by WADA during competitions, IAAF, (2011). This include Lydia Cheromei and Susan Chepkemei who tested positive for medicinal drugs. David Munyasa and Komen tested positive for recreational drugs. In all the cited cases, the athletes did not apply for the Therapeutic Use Exemption (TUE) and they did not make appeals after the cases were determined. Such cases of doping portrayed Kenyan athletes as being largely ignorant of banned substances, doping test procedures and their rights and responsibilities. Currently, there are no studies that have been done to establish the athlete's level of awareness of doping regulations stipulated by WADA.

In 2013, the IAAF banned three top Kenyan athletes for doping; Wilson Erupe Loyanae, a two- time winner of Seoul marathon, Nixon Kiplagat and Moses Kurgat, both renowned Kenyan long-distance runners AK, (2013). Further, statistics released by WADA and published by AK, (2013), on the list of athletes serving a ban for doping indicated a drastic

rise of Kenyan athletes in the list, from four in 2010/2011 to 17 in 2012/2013 which indicates a sharp increase. Most of the cases tested positive for PEDs rather than medicinal or recreational drugs as witnessed in the past. Two Kenyan athletes, Moses Kiptanui and Mathew Kisorio have openly confessed that doping is rife in Kenya (BBC Interview, 15th February 2013). This has raised concerns by WADA who issued a stern warning to the Kenyan Government to address the issue.

While many studies have been conducted on possible factors that could be responsible for Kenya's running dominance in middle and long-distance races, Scotts & Pitsilladis, (2007), Onywera, (2009), Elbe, Madsen & Midtgard, (2010), and Hamilton, (2000), none of the studies has explored athletes' possible perceptions on use of performance enhancing substances. This is what this study aims to establish. Studies have established that use of Performance enhancing substances have adverse negative effect on athletes' health long after one has stopped using them, Takala, Ruokommen & Webster, (1993), Christian, (2001), Laurent et al., (2004). Further, it is likely to spoil the integrity of the sport in the country, which for a long time has been the source of national pride. Individual athletes who use PEDs risk cutting their careers short, which is a source of livelihood for their families. Doping is therefore an emerging problem which must be tackled at root level, before it gets out of hand hence this study.

### **1.3 Research Questions**

- a) What is the attitude of performance enhancing drugs among athletes in North Rift?
- b) What is the level of knowledge of performance enhancing drugs among Kenyan athletes in North Rift?
- c) What factors influence the practice of doping among the athletes in North Rift?
- d) Are there athletes that use Performance Enhancing Drugs in North Rift?

### **Objectives of the Study**

The general objective of this study was to investigate Perceptions of use of Performance Enhancing Drugs among athletes.

### **Specific Objectives of the Study**

- 1) To examine the attitude of North Rift athletes towards use of performance enhancing drugs
- 2) To determine the knowledge of Performance Enhancing Drugs among athletes in North Rift
- 3) To establish factors that influence the practice of doping among the athletes
- 4) To establish possible practice of doping among Kenyan athletes in North Rift

### **1.4 Significance of the Study**

This research would provide information that could be used to improve doping education in the country and therefore try to solve the problem from the root. With the improved educational programs, athletes would be able to make informed decisions when faced with issues regarding use of performance enhancing drugs. This would also safeguard the

integrity of sport in Kenya. The research identified reasons that may lead to non-compliance of WADA regulations by some Kenyan athletes. The research would expand the body of knowledge in the area of doping, particularly in North Rift where most athletes come from. Further, the findings of the research would guide in sports policy development and amendments of legal framework regarding regulation of sports. Information obtained from the research would be used by Ministry of Sports, NOC, Athletics Kenya, IAAF, ADAK, and WADA in addressing doping issues affecting the country.

### **1.5 Scope and Limitations of the Study**

Recruitment of the participants was limited to athletes who compete both Nationally and Internationally. Both male and female athletes of senior and junior categories were considered for the study. Range of athletic events were from middle to long distance track races. Cross country and marathon athletes were also included in the study. Sprints and field events were excluded from the study. The research survey was restricted to Kenyan athletes. This did not necessarily represent majority of the young upcoming athletes who enter the international scene every year. It did not have representatives from sporting events like team sports.

The self-reported nature of the survey may limit the reliability of the data. This is more especially when it comes to finding out the possibility of practice of doping by athletes. Doping is illegal and therefore, athletes who may have doped and were never discovered are unlikely to report about their practices.

## **1.6 Assumptions of the Study**

The study was carried out with the assumption that all participants would co-operate and be honest in their responses. There were 10 researchers that were recruited and the participants were on voluntary basis and the purpose of the research explained to them. Issues of confidentiality were also discussed. It was assumed that this would create confidence among participants and therefore enhanced honesty in their responses. It was also assumed that all athletes had some level of literacy and understood how to fill the questionnaire.

## CHAPTER 2

### LITERATURE REVIEW AND THEORETICAL FRAMEWORK

#### 2.1 Literature Review

##### 2.1.1 History of Doping

History and Development of Doping can be said to be as old as sport. In early history, warriors were known to eat animal brains, hearts and livers to become more intelligent, and stronger, Murray, (2011). In West Africa for example, men consumed a type of herb known as cola nitida which was believed to improve performance, Higgins, (2006). In China, army men ate Ma Huang as a means of stimulation. Around 5BC to 3BC in Greece, athletes were put on special diets such as dried figs, wine, wet cheese, meat and mushrooms to enhance performance in sport, Murray, (2012). In America, sportsmen in Peru and Mexico regions consumed cola leaves to boost endurance during competitions, Hoberman, (1992).

By 1920, doping had become evident in many sporting events that restrictions became essential, Wadler, (2011). Besides, there were reports of fatal cases of doping. The first recorded fatal case was in 1886, an English cyclist who died of an overdose of what was known as trimethyl, Wadler, (2011). Since then, fatal cases continued to increase in number. In 1960, a Danish cyclist, Knud Jensen and an English cyclist Tommy Simpson died of some form of drug that was meant to improve their performance, Maraniss, (2008).

Since the 1960s, advancement in science and technology brought many new drugs into the market, ideally with the intention of treating ailments and improving the health conditions of patients Wadler, (2011). Unfortunately, athletes in their efforts to gain athletic advantage over colleagues have abused the drugs. For example, anabolic steroids were first developed

in 1930s with an intention to treat starving victims by promoting nitrogen balance, and to treat testosterone deficiency, Schanzer, (2004). Athletes immediately took it up as a means of enhancing their hormone levels for better performance, Peters, (2002).

### **2.1.2 Basis of Doping**

Ehrnborg and Rosen, (2009), explain that athletes use PEDs due to societal pressure, financial stress, desire to improve physical appearance, to win, perform better and look 'ideal'. Similarly, Yesalis and Bahrke, (2000), have cautioned that the importance attached to winning and perception towards improving physical appearance may cause athletes to use performance enhancing drugs. Some athletes are also reported to use PEDs if it guarantees them finances to pursue their college studies, Albrecht, Anderson and Mckeag, (1992). Laure, Bansinger and Lercerf, (2002), expound that abuse of substances in sports have increased as the pharmacy drug industry has grown. They state that this has made the drugs to be readily available and an individual can even purchase online.

Laure et al., (2003), report that some medical practitioners offer medically assisted doping and supply elite and amateur athletes with doping agents either deliberately or through carelessness. Findings by Laure et al., (2003), indicate that some doctors do not appear to have much knowledge of the subject of doping as 85% of the respondents admitted that they were not familiar with banned drugs or their side effects. What was unsporting conduct is the revelation that professional team sports' personnel were routinely supplying PEDs to athletes during training, Koch, (2002) Lubna et al., (2008).

According to Moran. Guerin. Kirby & Macintyre, (2008), athletes are reported to be drawn to doping in a place where the training environment encourages or even supplies the doping drug. They noted that athletes confessed to having found it very difficult to resist the

temptation to dope when some of their training peers use PED. Desire to dope also makes an individual susceptible to doping especially if confounded by situational and personal factors, such as low self-esteem or lack of confidence have been seen to correlate positively with doping and intention to dope, Lubna et al., (2008), Laure & Bansinger, (2007), Koch, (2002). Jendrek, (1992), concurs that situational factors may influence an athletes' decision to dope depending on how one is related to the cheater and the need that drives one to use PES.

Whitaker, (2012), study of 729 athletes in team and individual sports, found out that athletes competing at national level displayed a strong inclination towards doping than those competing at lower and at international levels. Furthermore, Whitaker, (2012), has observed that athletes were willing to use performance enhancing drugs if and when they experienced decline in performance, if they suffered injury before a major competition, if funding for their education was threatened and, if they also suspected that others were likely to be using illegal substances. The study recommended that there was need to support athletes who suffer injuries as well as educate them.

Whitaker, (2012), too reports that significant others, especially, exerted great influence over athlete behavior towards banned substances in that some reported they would dope, if the coach (87%) and fellow athletes (88%), doctor (71%) and, family (71%), approved of the behavior. The study recognized the need for the coaches also to be educated in order to understand the extent to which their behavior and perceptions can influence athletes' behavior on matters relating to banned substances. He reported that (37%) athletes suspected their colleagues would use PES if they would not be detected and if they were sure they would win in their sports but the number of athletes went down to 9%, if the drug



was to lead to death after five years. About 41% a noted that they suspected others to be using banned substances to enhance performance. He concluded that prevalence estimate of doping can be used to target athletes' perception change through education as it has been revealed that athletes who suspect others to be doping are more likely to engage in the behavior.

### **2.1.3 Cases of Kenyan Athletes Implicated in Doping**

Although Kenyan athletes have tried to stay clear of doping, there have been cases of suspended individuals. John Ngugi, the five- time world cross-country champion was banned from participating in any IAAF recognized competition in 1993 for objecting to an out of competition dope test due to ignorance of such a test submission requirement, Republic of Kenya, (2014), and John Ngugi Foundation (2014). Anti-doping taskforce, Republic of Kenya, (2014), reported many Kenyan athletes including the sprinter, Simon Kemboi, who was suspended for two years after testing positive during the 2000 Sydney Olympic Games. In 2003, Pamela Chepchumba was banned from sports competitions for two years by IAAF and in 2004 Athens Olympic Games, a Kenyan boxer, David Munyasia, tested positive for banned substance cathine, a chemical substance found in miraa. The boxer reported lack of knowledge or awareness that miraa contains chemicals in the list of banned substances of the WADA.

In 2005, a professional footballer on assignment with a South African soccer club tested positive on banned substance leading to the termination of his career with the club, Wekesa, (2009). Gaffney, 2008 cites Elizabeth Muthoka, a Kenyan 400m sprinter who tested positive for nandrolone, a banned substance, in July 2008 during the Beijing Olympic trials. The athlete claimed that she was being treated for anemia without having acquired

Therapeutic Use Exemption. According to Gaffney, (2008), although nandrolone treats anemia and boosts the hemoglobin levels, it should not be the first line of treatment an athlete should take.

Other Kenyan athletes who have tested positive on banned substances according to the Republic of Kenya, (2014), include, Salome Jerono in 2012 for nor androsterone, Jepkorir Peris in 2013 for nor androsterone, Lydia Cheromei in 2006 for clomiphine, Susan Chepkemei for salbutamol in 2007 and Simon Kemboi in 2000 for anabolic steroid. In the case of Chepkemei, she should have obtained a Therapeutic Use Exemption for salbutamol since there is a provision by the WADA. These cases of doping indicate ignorance as the main cause of athletes' use of banned substances thus contravening the world anti-doping regulations. The world anti-doping agency expects the respective national sports federations to educate its bona fide athletes hoping that those who are already doping or planning to, could have their attitudes towards doping changed for the better, WADA, (2015), RADO, (2007).

#### **2.1.4 Perception of Doping Behavior**

Bucher & Wuest, (1999), emphasized that the competitive nature of sport today has resulted in fostering of extremely dubious values and practices on the part of the coach and the competitor. An athlete who dopes, robs sport of its noble task of perpetuating positive values. Values such as integrity and honesty are overshadowed by greed and self-centeredness, Bucher & Wuest, (1999). Socially, an athlete guilty of doping undergoes a psychological torture and feelings of shame and isolation, Kayser et al., (2007).

Petroczi, (2007), studied 199 USA male college athletes and concluded that the importance an athlete attaches to winning, may strongly influence their perception of doping. He

reckons that athletes' personal trait may also have an influence on PES use and that it is equally likely to be influenced by beliefs about sports models. A study by Peretti-Watel et al., (2004) reported that approximately 90% of athletes believed that PES use was not only dishonest but also unhealthy. Majority of the respondents in the study noted that they were fearful of getting caught and of possible sanctions. Male respondents were shown to be more likely to accept the opinion statements portraying PES as beneficial to the user more than the female counterparts.

Peretti-Watel et al., (2004), further posits that athletes from low socio-economic background perceived PES to be acceptable and beneficial to performance, thus the study concluded that such athletes are more likely to dope as a means to an end such as improving their financial and social standings. A survey by Anshel & Russell, (1997), of Australian elite athletes presented majority of respondents as having the opinion that use of PES is unethical and immoral hence unacceptable as a means of gaining a competitive edge over opponents. Another study by Bloodworth & Mcnamee, (2009), on attitude towards doping among 40 male and female athletes in United Kingdom (UK) reported that participants to have been of the opinion that use of PES in UK was insignificant but was of the view that it was common in other nations.

Similarly, a survey of 832 British elite athletes by Mazazov et al., (2008), concluded that athletes who were likely to use PES were of the opinion that use of the same was prevalent in their sport but the same respondents were familiar with various dope testing procedures. Petroczi, (2007), noted that athletes' perception of PES can also be influenced by athletes' personal trainer opinion of doping and that of the role models. A study by Petroczi, Aidman & Nepusz, (2008), of 111 college students' perception to doping established that 66% of

athletes were of the opinion that doping is useful for ones' athletic performance. An investigation of 50 university student's perception of doping by Kumar & Jyoti, (2013), using a self-report questionnaire found out that majority of students believed that doping is cheating, only the quality of performance should matter, but the way athletes achieve success in sports' performance is also important.

Health problems related to hard training and injuries are just as doping side effects. Doping is a real threat to fair sports' participation and majority of respondents agreed that a complete ban of doping in sports is necessary. Kumar & Joyti, (2013), recommended that WADA and government bodies should step up strict measures to ban doping and that every sport participant should be educated on the need for honesty and hard work that would lead to success in performance. A survey by Dimeo, Allen, Taylor, et al., (2013), of 200 Scottish athletes drawn from team sports and individual sports, set out to investigate whether team sport environment protects team players from the risk of doping compared to athletes pursuing participation in individual sport.

Dimeo, Allen, Taylor, et al., (2013) established that team environment enjoyed by participants give a sense of belonging which tend to protect the athlete from doping as they fear the shame of being caught and banned as well as the likely social marginalization that would follow. The study also indicated that team athletes did not feel pressure to dope as the athlete in individual sport, especially the pressure coming from the coach. Athletes in team sport felt that the coach-athlete relationship may have a slightly different emphasis in individual sport as a result of greater one-on-one contact time whereby the coach may exercise more control over the athlete.

Dimeo et al., (2013), further report that athletes in team sports perceive that participants in endurance and power-based sports are more likely to benefit from doping activities than those in sports demanding tactical involvement. A comparison of perception of doping related risks by junior (9 players) and senior athlete (13 players) participating in football and volleyball was conducted by Mroczkowska, (2010), using a self-report questionnaire. The junior players were 16-18 years old with a sporting experience of 4-8 years while the senior players were 20-32 years old with sporting experience of 8-18 years. The study set out to identify values that may be lost due to doping. These included health, medals, ranking position, physical attractiveness, psycho-emotional balance, bonuses and respect of personages.

Mroczkowska's (2010) findings indicated no significant differences in ranking values to possible doping related losses despite marked differences in sporting experience. Both experienced and non-experienced players indicated they valued respect, health and psycho-emotional balance than medals, bonuses and physical attractiveness. However, the less experienced players underrated the risk of losing health and respect and overrated that of likely bonuses. Higher real doping-related risk score reflected knowledge of the modes of action and of negative effects of doping. Mroczkowska, (2010), concluded that experience of senior 33 players made them overly cautious and the risk they were willing to accept was significantly lower compared to junior athletes.

Whitaker, (2012), study of athletes competing at national and international competitions revealed that athletes competing at national level reported themselves to be more similar to athletes who dope hence she concluded that such athletes are likely to engage in doping than those who identify with individuals engaging in 'clean' sport. Athletes also perceived

the image of dopers favorably hence Whitaker, (2012), concluded that the more favorable an athlete perceives another who use PES the more likely they are to use banned substances in future. Male athletes identified themselves more with the image of banned substance users. This means role model sports persons are important figures to upcoming athletes. Whitaker, (2012), recommended athletes' perceptions be targeted through doping education so that their view of those who dope can be made negative hence they will be less likely to use PES in future.

### **2.1.5 Emergence of Professional Athletes**

Poverty in Kenya, especially in remote areas where most athletes come from, coupled with the lack of employment in the country have encouraged many Kenyans to take on sports to improve their economic status. In the past decade, there has been emergence of professionalism in athletics both nationally and internationally. A number of Kenyan athletes are sponsored by Kenya Prisons, Kenya Police, Telecom Kenya, private universities, private organizations among other institutions specifically to represent them during athletics championships. The athletes are recruited with the understanding and obligation that they have to perform well to maintain their contracts. However, there is little information on how these athletes are able cope with the demands of their other duties or study requirements amidst rigorous training to maintain top performance in athletics. It is not established whether such pressure is likely to push them into use of performance enhancing drugs.

### **2.1.6 Effect of Athlete's Migration to Other Nations**

Low returns that Kenyan athletes get when they compete locally, has pushed some of them to look for better income elsewhere. They are 'hooked up' by training agents or managers

who connect them to educational institution or even national clubs overseas. There are articles that have been considered to explore the effect of athletes' migration on their performance, and the likelihood of these athletes using performance enhancing drugs. Darby, (2001), elaborated on the migration of Kenyan athletes to oil rich countries like Qatar and Bahrain as well as developed countries like USA and the UK. The study examines the reasons for their migration which emerged to be improving living standards and the presence of opportunities in those countries.

Simms & Rendell, (2004), noted that the migration of Kenyan athletes to compete for other nations has turned into a global trade, and therefore, Kenyan athletes have shifted allegiance from their home country to wealthy states which have become their new homes. Lukalo, (2005), in his paper, termed the migration as 'evolution or devolution of athletes, athletics and sports policy', citing, especially, how these athletes have changed, not just their citizenship but also their names and identities. Darby, (2001), in his paper, termed the practice as 'The New Scramble for Africa', elaborating on how Kenyan athletes have been enticed into American colleges with scholarships which they have to sustain by showcasing excellent performance in athletics.

Chepyator, (2003), attempted to establish the experiences of these scholar runners in USA. The study established that, though majority of the athletes were satisfied with their academic achievements, a good percentage expressed concern over the pressure placed on them to maintain their university scholarships. However, it is not clear whether this pressure influences their attitude and behavior towards doping.

### **2.1.7 Use of Recreational Drugs**

There are studies that have been conducted to establish levels of drug use in Kenya, types of drugs, and possible reasons for their use. Otieno et al., (2009), conducted a cross sectional survey to establish the factors associated with drug use and abuse among secondary school students in Kisumu region. The study sought to determine particularly the effect of age, gender, and peer-influence on drug use. The findings showed that the most common reason for drug use was enjoyment, (47.3%), followed by experimentation, (38.2%), then influence from friends, (18.7%). The most commonly abused drugs were alcohol (57.9%), tobacco (34.7%), cannabis (18.3%), and khat, (23.1%). Balmer et al., (1997), explored use of drugs by youth as a possible way of coping with frustrations that result from inability to meet set goals or achievements. The authors concluded that socio-economic changes in developing countries have led to dilemmas among youth, which consequently has resulted in the use of drugs. Two other studies established the same precedence.

Mugisha A., & Hagambe, (2003), and Otieno et al., (2009), both indicated that, low socio-economic status, adolescent aged between 16 and 18 years, prevalence in boys, and being out of school as contributing factors to drug use. The authors recommended that these factors should be considered when developing health education programs for secondary schools. A popular recreational drug used in Kenya is miraa, also known as khat. A number of studies have explored the use of miraa among some communities in Kenya, Carrier, (2003), Warfa, (2007), Aden, (2006), & Dhaifalah et al., (2004). Miraa is mainly grown in Meru and Embu regions but it is consumed in many parts of the country including Tigania and Igembe. It has also penetrated Kenya's big towns of Mombasa, Nairobi and Nakuru.



According to two studies Carrier, (2003) & Warfa, (2007), the substance enjoys a cultural significance by a number of Kenyan communities. Apart from its economic significance, it is seen as a center of focus for social gatherings, a symbol of identity and an avenue of solving disputes and bringing families together. Aden., Dimba., & Ndolo., (2006), looked at the socio-economic effects of khat chewing in Eastern Kenya. The study indicated that the use of the substance was rampant in the region, with up to 88% of the respondents admitting that they had family members who use it. The study also informed that there was an overall lack of knowledge of negative effects of khat by its users. The users are also known to spend three quarters of their budget on the substance. This concurred with the findings of Dhaifa et al., (2004), which concluded that miraa caused diversion of valuable household income that could have been used for home improvement.

#### **2.1.8 Use of Traditional & Herbal Medicines**

Findings from majority of studies indicate that herbal medicine was significant in traditional societies and still play a role in some communities today. However, there was a general concern by most researchers that information on the herbal medicine is still scanty and usually passed orally from generation to generation, therefore, it may pose a risk of consuming illegal substances by the athletes. Safety and efficacy of drugs was explored by Orwa et al., (2007). The study noted that the safety and efficacy of herbs was only available for a few plants. Koros et al., (2008), carried out a study to establish indigenous medicine plant utilization, management and extinction threat in Samburu West, Kenya. Findings of the study indicated that use of 56 medicinal plant species were used to treat different diseases including, digestive disorders, respiratory problems, malaria and skin disease.

A similar study conducted in Central Province by Njoroge et al., (2006), sought to establish traditional remedy for Ear, Nose and Throat infections. Findings of the study showed the use of 67 species of herbs derived from 36 plant families. They were commonly used for treatment of wounds, body aches, stomach upsets and burns. A study of herbal medicine use among the Maasai community of Sekenani, Rift Valley, Bussman, (2006), revealed that up to 150 plant species were used. Thirty-Nine species were particularly used as medicine to treat ailments while the remaining was consumed with food and generally believed to boost health of individuals and guard against disease. There was a second study of plant use among the Maasai community, Kiringe., (2006). It established that 73% of the respondents preferred to use traditional herbs to modern medicine. This study was carried out among the Kuku group of Southern Kajiado District.

A final article on use of herbal medicine is a study by Otieno et al., (2007), that explored the utilization of herbal medicine in management of diarrhea in urban centers in Kenya. The results indicated that 97.4% of participants sought this mode of treatment for diarrhea conditions. The main reasons for choosing it were given as its effectiveness and due to its low cost. The above studies have shown a wide use of herbal medicine among different sectors of people in Kenya today. Though the studies do not point towards use of herbs by athletes, the samples were drawn from societies in which the athletes exist. This therefore, means that there are possibilities that the practice may affect Kenyan athletes as well. This raises concern over risk of athletes taking prohibited substances that may be contained in the herbal medicine.

## **2.2 Commonly Abused Substances and Methods**

### **2.2.1 Anabolic Steroids**

Anabolic steroids fall under the S1 category of WADA prohibited substance list. Anabolic steroids are chemically manufactured drugs. They are the man-made version of testosterone, the male sex hormone, Schanzer, (2004). This class of doping substance include all steroids that contain anabolic properties, meaning that they cause an extensive increase in muscular mass WADA, (2011). There are not many Kenyans who have been found guilty of using anabolic steroids, WADA, (2011). Those found include Ambrose Bitok who failed a drug test in Linz in August 2003 after testing positive for substance norandrosterone and Elizabeth Muthoka who was selected to represent Kenya in the 2008 Summer Olympics. She, however, did not compete after she tested positive for the substance nandrolone and was given a two-year ban. Another athlete, Joseph Cheromei, who was selected to represent Kenya in the year 2000 Summer Olympics, was suspended after testing positive for nandrolone. These incidences are evidence of abuse of anabolic steroids among Kenyan athletes, and thus the need to investigate the extent to which the drug may be used. There is need to also assess athletes' awareness on their effects on health as well as the potential of the drugs to jeopardize their careers.

### **2.2.2 Blood Doping**

Blood doping falls under the category of prohibited methods in the WADA prohibited list. According to Venables, (2008), blood doping refers to the process of oxygen enhancement, where a persons' hemoglobin concentration is artificially increased above normally occurring levels in order to improve the athlete's endurance. Gaudard, (2003), described blood doping as the use of artificial oxygen carriers. While hemoglobin is the natural

oxygen carrier in the body, artificial carriers are manufactured substances, designed to aid in the transport of oxygen throughout the body. Scientific research has led to the isolation of hemoglobin from erythrocytes which can then be infused directly into humans. This therefore, has led to the generation of different forms of modified hemoglobin solutions. Blood transfusion is one form of doping classified under prohibited methods. It refers to the transfer of blood into a person's vein Vernables, (2008). A number of studies have indicated that blood transfusion can increase a person's hemoglobin concentration above normal levels, Guardadet al., (2003), Ross et al, (2007), Promer et al (2010), and Vernales, (2008). According to Guardadet al., (2003), the increase in hemoglobin levels, correlates to an increase in maximum oxygen uptake because the extra hemoglobin can transport extra oxygen. This increases the athletes' endurance thereby improving performance.

### **2.2.3 Gene Doping**

This refers to manipulation of genetic elements to improve muscle performance, Mc Phenon, (1997), Barton, (1998). It involves application of gene therapy techniques in genetic enhancement of human performance. Gene transfer into muscles is known to counteract age related muscle atrophy, Barton, (1998). This is the same as the effects of training in muscle hypertrophy, thus there is a potential that increased expression of certain genes in skeletal muscles may increase muscle strength in athletes. A recent study, conducted by Wells, (2008), looked at the effects of gene therapy on performance. The study concluded that genetic manipulation, produced impressive results in animal models but it has only shown significant beneficial effects in a limited number of human trials.

#### **2.2.4 Stimulants**

Stimulants belong to group A of the IOC list of prohibited class of drugs in competitive sport. The term stimulant is used to refer to a cluster of compounds whose effect is to influence the central nervous system to cause a reduced tiredness, increased attention and disposition for competition as well as aggressiveness. These substances include amphetamine, cocaine, methamphetamine, benzenediamine among others. There are a few Kenyan athletes who have tested positive for ephedrine and pseudoephedrine, Ndeti, Kiptanui, and Komen, WADA, (2009). They claimed to have bought the drugs over the counter for cold relief. This cast doubts as to whether these athletes were aware of prohibited substances outlined in the WADA list. The three did not seek Therapeutic Use Exemption, (TUE), neither did they appeal for leniency considering that they were taking it for medicinal purposes. This also portrayed them as being ignorant of doping procedures.

#### **2.2.5 Beta -2 Agonists**

This group of substances may be used for medicinal purposes but have the potential to enhance performance in sport. Therefore, its use is regulated. Salbutamol dose, for example, is allowed up to a maximum of 1600 micrograms over 24 hours which is in accordance with manufacturer's recommendations. The presence of salbutamol in urine in excess of 1000ng/mg is presumed not to be intended for therapeutic use therefore, prohibited, WADA, (2011). Kenyan athletes have tested positive for therapeutic drugs taken in excess of what is allowed by WADA. This casts doubts on their level of awareness of what is allowed and what is not. The research was intended to establish this level of awareness and to recommend possible remedy where required.

### **2.3 Drugs and Substance use by Athletes in Sports**

Koch, (2002), reported increase in use of steroids among young athletes with 5 - 11 % of high school males admitting use of anabolic and androgenic steroids by the time they finished high school. These conclusions agree with observations by Insel and Roth, (2002), that the younger a person is when he/she starts to use the drugs, the more chance the individual is to use illegal drugs. A study of 503 Jordanian College students and athletes by Lubna et al., (2008), using a self-report questionnaire, studied the extent of abuse of androgenic steroids and the risk factors associated with the abuse. The conclusions revealed that students start to use performance-enhancing substances before the age of 15 years. It was further revealed that Jordanian body building athletes and college athletes, significantly used PES with the intention of improving performance.

Furthermore, androgenic substances could only be obtained through a doctor's prescription, however athletes could still acquire them since coaches supplied them. About 45.6% of the non-using athletes reported that they would use PES if they were provided with for free. The study recommended that, The Jordanian Ministry of Education and the Higher Council for Youth, conduct a more comprehensive survey to measure the prevalence of anabolic-androgenic Steroid (AAS) abuse. The study was limited only to the body builders and did not include participants in other sports. An investigation of the attitudes of 856 Japanese physical education university students towards doping in sports by Masato, Yukitoshi and Tosihiko, (2013), showed that they were not aware of the kind of drugs they were using. This was notwithstanding the fact that the students had attended lectures on illegal drugs, an indication that they had not studied the doping control systems.

Masato et al., (2013), recommended prevention of progress of the prevalence of illicit or performance enhancing drugs. Performance-Enhancing Substance use studies among College Athletes showed that this category of sportsmen and women is not exempt from variety of PES use. A study was carried out by Schneider and Morris, (1993), using a self-report questionnaire to gather doping information from 554 USA college athletes' attitude and behavior towards a mandatory drugs education program testing. The study involved athletes in basketball, American football, baseball, track and field athletics, and hockey. Out of 197 athletes who responded, 57% of them had used PES in college and 10% noted that PES use had heightened sports performance. The study also revealed that male athletes were more likely to use illegal substances than female athletes. However, the study did not compare attitude to PES by gender nor by competition experience.

An evaluation by Peters, (2005), of college athletes' beliefs and social norms about ephedra onset and perceived addiction, focused more on feelings towards users, how long the drug had been used, signs of addiction, health risks involved and what would prevent athletes from stopping the use of ephedra. Male athletes indicated that the reasons for the use was to enhance performance and due to the coach's and peer's encouragement. Weight loss and need to increase energy levels were the main reasons cited by the female athletes. Athletes too reported that they would use the drug if winning the sport was guaranteed. Routine use of the drug was because of addiction while health risks resulting from use of ephedra included shaking/tremors, and weird behavior.

As per Peters, (2005), female athletes indicated that the reasons they could not manage to stop PES use was due to their looks. Both male and female athletes noted that performance enhancing substances and lack of education, were the main barriers in quitting the habit.

Using an anonymous self-report questionnaire, Buckman, et al, (2009), investigated 234 male college student athletes aged 18-26-year-old on whether they were involved in high-risk patterns of alcohol and other drugs use as well as establish risk behaviors associated with problematic substance use. Buckman et al., (2009), showed that PES users (those who had reported past year use of broad array of PES), 21 of them displayed more problematic alcohol-use behavior and drugs-use-related problems. They came to a conclusion that the male athletes who reported PES use also participated in substance use behaviors that could have profound negative effects on sports performance. Athletes who used alcohol in sensational seeking behavior, were reported to also have used steroids. The athletes who were using PES were reported to have limited awareness of drugs they used.

Whitaker, (2012), study of 729 athletes in team and individual sports found out that athletes competing at national level displayed a strong inclination towards doping than those competing at lower and at international levels. Further, Whitaker, (2012), has observed that athletes were willing to use performance enhancers if and when they experience declined performance, if they were to suffer injury before a major competition, if funding for their education was threatened and, if they suspected that others were likely to be using illegal substances. The study recommended the need to support athletes who suffer injuries as well as educate them.

Whitaker (2012) also reports that significant others exerted great influence over athlete behavior towards banned substances as follows, they would dope if the coach (87%) and fellow athletes (88%), doctor (71%) and, family (71%) approved of the behavior. The study saw the need for the coaches to be educated in order to understand the extent to which their behavior and perceptions can influence athlete's behavior on matters relating to banned



substances. Whitaker, (2012), also reported that (37%) athletes suspected their colleague would use PES if they would not be detected and if they were sure they would win in their sports but the number of athletes went down to 9% if the drug was to lead to death after five years. About 41% also noted that they suspected others to be using banned substances to enhance performance. Whitaker, (2012), concluded that prevalence estimates of doping can be used to target athlete's perception change through education as it has been revealed that athletes who suspect others to be doping are more likely to engage in the behavior.

### **2.3.1 Athletes' Competition Experience and Substance use in Sports**

Consequences of doping are outlined in the WADA code. One would therefore expect athletes especially those who aspire to enter competitions or those who have competed for a longer time to be better informed on issues to do with doping. However, research outcomes are to the contrary. Athletes who have been in sports competition longer are reported to be more inclined to doping than participants who have competed for a few years. Athletes have also been found to be lacking in vital information on doping related issues while others have portrayed carefree attitude. Some have been reported to have the desire to engage in 'clean' sports competitions. Feinberg, (2009), for example, has reported athletes with few years of competition as lacking awareness but displayed negative attitude to banned substances. Seeking to establish whether athletes with varying competition experience view PES differently, taking into consideration, values that a doped athlete was likely to lose if detected. Mroczkowaska, (2010), reports that there was no difference on doping consequences between athletes who had competed for 4-8 years and the one who had a long (8-18 years) of competition experience. All athletes observed that they valued health, medals, ranking position and sports-related values and they would stay clear of the

banned substances to avoid losing them. However, athletes with less competition experience, showed less value for health and respect and displayed high value for bonuses. Mroczkowska, (2010), described that probably the longer years in sports competition had a bearing in the senior athletes becoming more cautious about their health and the risk they were willing to take. Levent et al., (2005), also reported prevalence of doping substances among male athletes aged 20- 25years with the ratio of users increasing with the level of competitions as athletes graduate to high levels of sports competitions. An evaluation of college athletes' use of banned substances in sports by NCAA, (2006), discovered that sports competitors with least experience in competitions were portrayed to be pronounced alcohol users. The habit was not directed at enhancing performance but for recreational purposes. But NCAA, (2006), notes that alcohol users are more likely to be drawn to the use of other drugs that may be in the WADA code of banned enhancers. Reporting on the reason's student athletes used PES among French students aged between 16-24 years, Peretti-watel, (2004), documented that older experienced athletes who also had a sporting history in the family were of the opinion that banned substances were acceptable and beneficial to sports performance.

### **2.3.2 Performance Enhancing Substance use by Gender**

The problem of performance-enhancing substance use affects male and female athlete alike. Research findings have tried to explore the reasons why male and female athletes resort to doping and reasons they advance for engaging in the vice. Investigation of male and female participants in collegiate sports by Corbin et al, (2004), found out that 21% and 16% male and female respectively admitted to having used sports performance enhancers. Similarly, Peretti-Watel, (2004), reported that male athletes have more positive attitude to

PES than the female counterparts. In a study of British male athletes, Petroczi, (2007), reports that male athletes tend to attach a lot of importance to winning and that may incline them to desire to use doping substance. Their orientation to win in a competition seem to affect their attitude to PES. Petroczi, (2007), noted that though athletes were fearful of being detected for using illegal means in competitions, male athlete respondents were more likely than the female to lean towards opinion statements that presented doping substances as good to use. Some athletes are reported to tend to think that doping is only prevalent among athletes in other countries but not among them. For example, Bloodworth & Mcnamee, (2009), study findings on 40 British male and female athletes show that doping among British athletes as insignificant but very prevalent in other nations. Schneider & Morris, (1993), have observed that male athletes are more likely than the female counterparts to know members of their teams who ingest illegal substances for the sole purpose of enhancing performance. In an assessment by Peters, (2005), of various factors regarding ephedra use in sports such as what an athlete feels about others who dope, length of PES use, health risks as well as indications of addiction, male athlete cited peer and coach influence as the main reason for not quitting the illegal habit. On the other hand, female athletes noted the need to increase energy levels and weight loss as the reasons they couldn't stop using ephedra. However, both male and female athletes blamed lack of education about PES and the need to enhance performance as the reasons for persistent use. Reporting on a sample of 234 athletes, Buckman et al., (2009), indicates 73 male PES users and 160 non-users to have experienced more problematic alcohol use behaviors and more alcohol-and drug-use-related problems. Male PES users demonstrated higher sensational seeking and grater coping and sports motivations as reasons for taking alcohol and use of

marijuana. Buckman et al., (2009), concluded that although PESs may not be viewed as addictive the users are more likely to engage in substance use behaviors that are likely to have serious negative effects on athletics performance. Athletes should have other activities to engage in when they are not training or competing in a sport of their choice. This is because as reported by Brenner, Metz, & Brenner (2009), competitive athletes who participate in other activities outside sports in campus are less likely to pursue patterns of high-risk alcohol drinking than athletes who are not involved in other activities when they are not in their sport. Brenner et al., (2009) observes that female athletes are more likely to be involved in other activities than male athletes and therefore are less likely to engage in risky alcohol behaviors. Brenner & Swanik, (2007), posits that male athletes are more likely to engage in heavy drinking episodes than non-athlete males. Similar observations are made by Yusko, Buckman, White& Pandina, (2008) that male athletes engage more in substance use than non-athletes. The female athlete is likely to consume less alcohol, less frequently than non-athlete females but they portray higher rate of PES usage and less prevalence of social drug usage when compared to non-athlete female. As reported by Buckman at al., (2009) male athlete using PES was inclined to heavy alcohol consumption and used other social drugs frequently hence incurred more negative consequences than college athletes who did not use illegal substances. This view is supported by Yusko et al., (2008), that male athletes have a higher rate of tobacco consumption in all forms during the off season. On the other hand, the female athlete was seen to have higher rate of usage of recreation drugs during the off-season but used weight loss drugs throughout the year despite the fact that they may contain chemicals listed in the WADA code as a banned substance. Even as use of performance enhancers continues to be felt in sport, there are

athletes who purpose to participate in drug free sports competitions. Study findings by Collins et al., (2012), indicate that female athletes have explained that feelings of shame and guilt in the event of being caught was more influential in staying clear of the enhancers but it wasn't influential to male athletes. Collins et al., (2012) further points that 29% of male athletes compared to 35 % of females did not consider personal ethical standards as influential in decision not to engage in PES in competitions. However, more male athletes (17%) were more concerned of their health with regard to use of enhancers than (11%) female athletes. According to the report by Higher Education Center, (2010), female athletes are more likely to use and abuse weight loss aids and energy supplements especially in sports such as cross-country, gymnastics, and dance, figure skating where physical appearance and certain weight are considered important to performance. But the problem arises because the weight loss drugs are not controlled and are likely to contain chemicals among the list of banned substances by WADA. Male athletes participating at national level competitions are reported to have wrong perception of banned substance use in sports. Whitaker, (2012), for example reports that of the 729 athletes from both team and individual sports 37% reported that other participants would dope if they would not be detected and if they were sure ingesting of enhancers would result to winning. About 9% of the sample also noted that other athletes would still dope even though winning would eventually lead to death after five years. Athletes in this study were also of the opinion that their colleagues were doping. Whitaker, (2012), suggested that this wrong perception need to be changed by educating athletes because athletes who suspect others to be doping are highly likely to dope in future.

### **2.3.3 Performance-Enhancing Substance use by Type of Sport**

Research findings have reported varying dispositions towards use of sports performance enhancers by athletes in different sports. While some athletes have reported deliberate use of enhancers others have expressed their reasons not to engage in the vice. For example, Collins et al., (2012), study indicates 32% of team athletes reported that decision not to engage in doping behavior was influenced by fear of getting banned from competitions compared to 25% of athletes in individual sport. The differences were however not statistically significant. Certain types of male athletes are also reported to have more tendencies to use illegal substance. Men who played hockey as reported by Ford, (2007) demonstrated increased rate of binge drinking and marijuana usage, while track athletes were less likely to engage in binge drinking. Yusko et al., (2008) further observes that male athletes who had strong cohesion to their teammates tended to ingest drugs such as marijuana at lower rate than male athletes who display less team cohesion. This view is in concurrence with Grossbard et al., (2008) that athletes with strong bond to their teams showed fewer incidences of alcohol-related consequences. Reporting on 197 collegiate athletes in team sports, basketball, American football, baseball, and track and field events, Schneider Morris, (1993), 57% acknowledged to have ingested sports performance enhancers while in college and 10% went on to say that ingesting banned substances enhanced their sports performance. Further, study observations by Ford (2007) are that female soccer players had high tendency to engage in binge alcohol drinking, marijuana usage and use illicit drugs. In the same study female track athletes, swimmers and divers are portrayed as the least likely to get involved in banned substance use. College athletes in individual sports who also get involved in other activities when they are not playing are

reported by Brenner, Metz & Brenner (2009) to be less likely to take alcohol and they are also least likely to engage in risky alcohol behaviors. 27 Team sports athletes desire to remain in the group is explained by Kirby et al., (2008) as having an influence on their inclination to dope even though the pressure from the teammates was not a direct one. Team cohesion however disintegrates the moment an individual test positive for banned substances. Kirby et al., (2008) view is however contradicted by findings of a study by Dimeo et al., (2013) where team athletes were found to be less likely to dope because team environment cushions them from pressure to win since good performance is seen as a team effort and not an individual's responsibility Dimeo et al., (2013) explains that athletes in individual sports inclination to use PES is because the coach is likely to have more influence or exert pressure over the athlete. In Dimeo et al., (2013) study, athletes in team sports observed that their counterparts in endurance and power sports may be drawn to use PES than participants in sports requiring display of tactics. Similarly, a study Alaranta et al., (2006) points that 21% of athletes in speed and power sports portrayed attitudes inclined to doping compared to 14% and 10 % of athletes in team and endurance sports respectively. Equally, Nowesielski & Swistkowska, (2007) has observed that athletes in soccer, volleyball and handball demonstrated more awareness, right perception and negative attitude to doping than participants in track and field athletics. The anti-doping task force final report by Republic of Kenya, (2014) indicates that cannabis sativa (bhang) is prevalent and widely used among soccer players and other sports. And while participants noted lack of knowledge and awareness, some reported deliberate use of banned substances. Republic of Kenya, (2014), further observes that team sports are using variety

of drugs including cannabis sativa; Khat (miraa) and stimulants (Kuber). Anabolic steroids and Erythropoietin.

#### **2.3.4 Doping Awareness**

A study by Ama et al., (2003) on African amateur footballers in Yaoundé, Cameroon investigated athletes' use and awareness of lawful and unlawful substances. The results revealed that the footballers' knowledge of doping was vague. They recommended that preventive activities and an epidemiological study on doping among the footballers be carried out. The study was restricted to only footballers and did not factor in athletes in other games and track and field events participants. The study by Koch (2002) presents athletes as knowingly participating in doping regardless of being aware of the drugs' negative effects on health. In a self-report study on athletes' attitude towards doping involving 446 athletes by Alaranta et al., (2006), 9% of the respondents believed that banned substances have performance effects while 30% of athletes agreed to have personally known an athlete who had doped and 35% of males and 25% of the females reported to personally know an athlete who was using banned drugs at the time of the study. Furthermore, 15% of the athletes noted they had been offered banned substances. A survey by Anshel and Russell (1997) of Australian athletes' knowledge on PES reports that majority of respondents were of the opinion that use of PES is unethical and immoral hence unacceptable as a means of gaining a competitive advantage over opponents. A survey of 503 collegiate athletes and 154 body building athletes that aimed at measuring the extent of androgenic steroids (AS) abuse by Lubna et al., (2008) revealed that college athletes had no problems acquiring performance enhancing drugs as they knew where and how to get them. Both students and athletes noted that their friends and coaches were the major



sources whereas the main reason for the use of PES was to improve performance and physical appearance. The study recommended the need to implement educational programs to create awareness and enlighten students and mentors about the negative side effects of ASS on the health of the user as the drugs were increasingly becoming a public health concern. Lack of awareness of anti-doping issues by athletes is equally presented in a study by Levent et al. (2005) where 54 % of respondents acknowledged they were not fully aware 30 of the full doping drug potential and effects. The study concluded that young athletes are likely to suffer most from health problems associated with the drugs as well as chances of being suspended from sports. A survey of 200 Scottish athletes by Dimeo et al., (2013) established that majority of athletes were not aware of the current WADA legislation where article eleven of the WADC states that sanctions such as loss of points and disqualification can be meted on a team if three or more teammates are proven to have violated anti-doping regulations. To this effect Dimeo et al., (2013) recommended that awareness creation on the said legislation was needed because team sport athletes not aware of the consequences might promote anti-doping within their own team and since clean athletes would not want to feel cheated if they lose to a team found to have a number of doped participants. The study also showed that fear of being caught and shame that may befall the victim was the strongest factor preventing team athletes from doping.

### **2.3.5 Attitude to Doping**

A study by Petroczi, (2007), focused on relationship between athletes' attitude, sports orientation and doping behavior among the competitive USA male college athletes. The findings of the study indicated that athletes' win and goal orientation and competitiveness did not play a statistically significant role in doping behavior. However, win orientation

was found to have an effect on doping attitude. A considerable proportion of doping behavior was however unexplained hence the researcher concluded that other factors played an influential role in athletes' decision regarding prohibited methods. The study recommended that sports governing bodies and anti-doping organizations should appreciate the fact that use of performance-enhancing substances by athletes may be more a rational outcome optimizing behavior than deviance. The study, however, only dealt with male college athletes and did not incorporate female athletes yet doping is a vice that cut across gender. A survey by Alaranta et al., (2006) also reported positive attitude to doping by 21% of athletes in speed and power sports compared to 14% athletes in team sports and 10% in endurance sports. The study however did not factor in athletes' competition experience as a factor that can influence doping behavior. Lucidi et al., (2008) self-report study on use of doping substances and supplements among 1232 Italian students reported that intention to use performance-enhancing substances increased with stronger attitudes about doping and a lowered capacity to resist situational pressure or personal desires. Stronger intentions and moral disengagement were also found to contribute to a greater use of doping substances. A similar study amongst 458 French elite student athletes' relating to their attitude towards doping by Perretti-Watel et al., (2004), found out that athletes who dope pursue legitimate goals with illegitimate means but justify their behavior with illegitimate rationale. The study participants indicated that they were also fearful of getting caught and possible sanctions. Kirby et al., (2008), also reports a high significant positive attitude towards doping by male athletes than their female counterparts. Situational factors as reported by Jendrek, (1992), are likely to affect an athlete attitude towards those who dope depending on how a person is related to the cheater and the need that drives the

cheater to the vice thus an individual is more likely to be sympathetic with the cheater in his/her attitude towards the teammate or towards an athlete who cheats out of desperation. Jendrek, (1992), further points that when asked to rate people who cheat, a hypothetical situation, there was a tendency by raters to be more lenient to a friend who cheats than to those they were not acquainted with. This observation agreed with those of Feinberg, (2009), that athletes who cheat would be more lenient in attitude towards other athletes who cheat thereby recommended that cheaters should be judged by their intention and not by the consequences of their behavior. The WADC, (2015), has outlined that an athlete who is detected as having intentions to dope is judged to have doped because he/she would have made the intention good were it not for the fact that they are discovered before they carry out the heinous act. A survey of 856 Japanese university students' attitudes to doping by Masato et al. (2013) indicate that 79.1% of the participants had negative attitude towards doping while 20% approved of the drug's use in sports and a further 10% were reported to have used drugs to enhance sports performance. Masato et al., (2013), therefore recommended the need to curb the prevalence of illicit use of PES. Similarly, Whitaker, (2012), assessment of 35 athletes' attitudes, perceptions and inclinations towards legal and illegal enhancing substances found out that out of 729 athletes competing at either national or international levels 17(2%) were already using banned substance and 33 (5%) had previously used banned PES with the aim of improving their performance despite the existence of the anti-doping regulations. Whitaker (2012) concluded that drug testing alone was not sufficient deterrent and therefore recommended prevention measures and changing athletes' attitudes as well as helping athletes develop decision-making skills and adopting suitable coping skills in sporting environment. The study further revealed that athletes were

in full knowledge of the negative outcomes emanating from use of banned substances hence it is possible that those who confessed use of PES may have weighed the positive and negative outcomes before doping. Whitaker, (2012), reports that generally athletes demonstrated a negative attitude to doping but male athletes portrayed more positive attitude to banned substances more than female athletes. Equally, athletes who competed at club/university and national levels displayed more positive attitude than those competing at any other level. Since attitudes correlates with behavior, Whitaker, (2012), concluded that athletes who displayed positive attitude to banned substances are more likely to use PES. The study hence recommended prevention programs to correct athletes' negative attitudes targeting mostly male athletes and those competing at national levels. The broad objective of the World Anti-Doping Agency is to protect the health of the athletes, ensure fairness in sports competition by ensuring level playing ground and safeguard the image of sport, WADA, (2015). However, despite the existing anti- doping regulations, cheating is still prevalent and increased fans violence has to some extent been attributed to the sale of alcohol and other recreational drugs at sports events Insel & Roth, (2002). As noted by Bucher and Weust, (1999), well-intentioned, but overly involved parents, community, institutions and nations have exerted a lot of pressure on athletes to win and this over-emphasis on winning have detracted the value of sport and drawn many competitors to using illegal means of securing a trophy/medal or monetary rewards oblivious of effects of banned drugs on the athletes' health and likelihood of getting banned from participation in competitions. In response to this declining sports ethics, sport's governing bodies have sought to rectify the problem by imposing strict regulations WADA, (2015). Doping effects are as complex as the methods of doping and no benefits of winning a competition would

be worth to justify risks associated with the vice, Somerville & Lewis, (2005). Apart from the danger of being suspended or getting a life ban from sports competitions, other implications include physiological, psychological, social and ethical/moral effects. To ensure level playing ground, protect health of athlete and preserve the dignity of the sport, sports organizations such as IAAF, IOC, and WADA have listed banned substances and placed the onus of educating competitors on the implications of doping to local sports federations. However, despite the good intentions by WADA and sports organizations, PES use still exists in sports. Athletes are reported to use PES as they perceived the illicit drugs have positive impacts on athletics performance more than non-athletes. Such PES includes anabolic androgenic steroids, amphetamines, human growth hormone/erythropoietin which they perceive would combat fatigue, relieve pain, and enhance injury recovery, increase strength and endurance among other perceived benefits. As reported by David, McDuff & David, (2005), athletes have also explained that they have used substances such as alcohol, cocaine, marijuana to 'fit in,' boost self-confidence, and escape problems and to have fun.

### **2.3.6 Ethical and Social effects of Doping**

Laure et al, (2002) regards use of banned substances in sports unethical since those medical professionals involved in prescribing drugs to the athletes are not doing so for therapeutic purpose. It is on this basis that WADA allows therapeutic use exemption in sports. Bucher and Weust, (1999), emphasize that doping, sports, and ethics are not compatible. They reckon that sports should help the youth and children to win and loose with self-control, become effective team members, obey rules and play according to the code. Doping therefore is seen to rob sport the ethical/moral benefit. Bucher and Weust,

(1999), also emphasize that the competitive nature of sport today has resulted in fostering of extremely dubious values and practices on the part of the coach and the competitor. An athlete guilty of doping robs sport its noble task of perpetuating positive values hence doping is considered unethical such that integrity and honesty are overshadowed by greed and self-centeredness (Bucher and Weust, (1999). Socially, an athlete guilty of doping undergoes a psychological torture and feelings of shame and isolation besides doping compromising the image and respect for the sport and that of innocent athletes who might be held in suspicion as cheats. The guilty athlete no longer can serve as a role model and may often find it difficult to regain the self-esteem, (Kayser et al, 2007). Findings of a study by Collins, MacNamara, Collins & Bailey, (2012), alludes that personal ethical standards and morals play an important role in decision making on matters related to doping. Athletes training environment which include the significant others such as family and coaches was portrayed to exert influence on athletes' decisions to doping.

### **2.3.7 Psychological Effects of Doping**

Apart from their effects on the user's body, banned substances are also linked to dangerous and unhealthy psychological behavior. These include hostility and aggression, violent behavior, sexual crimes, inability to accept defeat, apathy, depression and wide mood swings among others Taffney, (2008), and NACADA, (2012). Insel and Roth, (2002), emphasize that sensations of enhanced energy and vitality, euphoria, with a sense of heightened function and perception have been reported by athletes who have used banned substances even though the intention was for recreational purposes. They have also reported the following effects among chronic substance users; irritability, aggression combined with violence, low self-esteem, sleep disorders, severe depression which may

lead to suicide, anxiety disorders, paranoid ideas and hallucinations. Hartgens and Kuipers, (2004), have reported that psyche and behavior seem to be strongly affected by Androgenic-anabolic steroid use, as the drug seems to induce increments of aggression and hostility both in and outside the sporting environment. Information from reviewed literature indicate doping as a persistent problem that has affected sports competition for a long time despite efforts to curb the problem. For sports lovers to get the playing ground level and for the sake of athlete's health as emphasized by WADA, the effort to clean up PES use in sports this should continue through research and good practice.

### **2.3.8 Motivational Factors**

Hamilton, (2000), explored among other factors, the role of social and psychological factors as contributing to the success of Kenyans in athletics. He attributed Kenya's success to negative external factors (poor economic situation) as compared to their European counterparts who enjoyed stable external factors, therefore, lacked the strive for excellence in athletics. A similar notion is portrayed in a study by Baker and Horton, (2007), which discussed the potential effects of athletes personal or group perception of their potentials. The study established that athletes who perceive themselves as having physiological advantage over their opponents tend to perform better. On the other hand, athletes who perceive themselves as having inferior potential tend to not to perform well. However, the study did not establish if this is a factor contributing to Kenya's dominance in running. A study by Entine, (2000), explored the role of Kenyan athletes' self-conception and the stereotype associated with them, which identifies them as middle- and long-distance runners. According to the study, this ideology is said to perpetuate a culture of running dominance among athletes. It instills a sense of self-belief in the said athletes which

translates to determination and actual performance. Elbe et al., (2010), conducted a cross cultural comparison of factors that motivate Kenya's runners as compared to their Danish counterparts. Findings indicate that both groups were more extrinsically motivated but to a larger degree by the Kenyan athletes than the Danish group. This also agrees with the findings of the study by Onywera, (2006), which indicated that majority of Kenya's athletes, both nationally and internationally, are motivated by economy.

## **2.4 Theoretical Framework**

### **2.4.1 Theory of Planned Behavior**

This Theory was developed by Icek Ajzen in 1985. Today it is perhaps the most popular Social-psychological model for the prediction of behavior. It has its roots in Martin Fishbein and Ajzen's theory of reasoned action, which was developed in response to observed lack of correspondence between general dispositions, such as racial or religious attitudes, and actual behavior. Instead of dealing with general attitudes of this kind, the TPB focuses on the behavior itself and goes beyond attitudes to consider such other influences on behavior as perceived social norms and self-efficacy beliefs.

According to the theory, human social behavior is guided by three kinds of considerations: beliefs about the behavior's likely positive and negative outcomes, known as behavioral beliefs; beliefs about the normative expectations of others, called normative beliefs; and beliefs about the presence of factors that may facilitate or impede performance of the behavior, termed control beliefs. For example, people may believe that the behavior of exercising, among other things, improves physical fitness and is tiring (behavioral beliefs), that their family and friends think they should exercise (normative beliefs), and that time constraints make it difficult to exercise (control belief). Taken together, the total set of



behavioral beliefs produces a favorable or unfavorable attitude toward the behavior; the total set of normative beliefs results in perceived social pressure to perform or not to perform the behavior, or subjective norm; and, in their totality, control beliefs give rise to a sense of self-efficacy or perceived control over the behavior.

Attitude toward the behavior, subjective norm, and perceived behavioral control jointly lead to the formation of a behavioral intention. The relative weight or importance of each of these determinants of intention can vary from behavior to behavior and from population to population. However, as a rule, the more favorable the attitude and subjective norms are, and the greater the perceived behavioral control is, the stronger is the person's intention to perform the behavior in question. Successful performance of a behavior depends not only on a favorable intention but also on a sufficient level of volitional control, that is, on possession of requisite skills, resources, opportunities, and the presence of other supportive conditions.

Beliefs play a central role in the TPB, especially those salient behavioral beliefs that are most readily accessible in memory. The most frequently emitted behavioral, normative, and control beliefs are assumed to be the salient beliefs in the population and to determine prevailing attitudes, subjective norms, and perceptions of behavioral control. These salient beliefs are focused on the behavior of interest, and they serve as the fundamental explanatory constructs in the theory. More general factors, such as personality traits, gender, education, intelligence, motivation, or broad values are assumed to influence behavior only indirectly by their effects on salient beliefs.

The TPB assumes that human social behavior is reasoned or planned in the sense that people are assumed to consider a behavior's likely consequences, the normative

expectations of important referents, and factors that may impede performance of the behavior. Although the beliefs people hold may sometimes be inaccurate, unfounded, or biased, their attitudes, subjective norms, and perceptions of behavioral control are thought to follow spontaneously and reasonably from these beliefs, to produce a corresponding behavioral intention, and ultimately to result in behavior that is consistent with the overall tenor of the beliefs.

This Theory is relevant in the decision by athletes to use performance enhancing drugs. If they believe that if they use PEDs, they will be rewarded, then they will go for it. This decision could be deliberate or planned, and therefore, TPB applicability in determining athletes' perception to banned substances.

#### **2.4.2 Deterrence Theory**

The deterrence theory of punishment can be traced to the early works of classical philosophers such as Thomas Hobbes (1588–1678), Cesare Beccaria (1738-1794), and Jeremy Bentham (1748–1832). Together, these theorists protested against the legal policies that had dominated European thought for more than a thousand years, and against the spiritualistic explanations of crime on which they were founded. In *Leviathan*, published in 1651, Hobbes described men as neither good nor bad. In the Hobbesian view, people generally pursue their self-interests, such as material gain, personal safety, and social reputation. Since people are determined to achieve their self-interests, the result is often conflict and resistance without a fitting government to maintain safety.

To avoid this, people agree to give up their own egocentricity as long as everyone does the same thing approximately. This is what Hobbes termed the social contract. To avoid war,

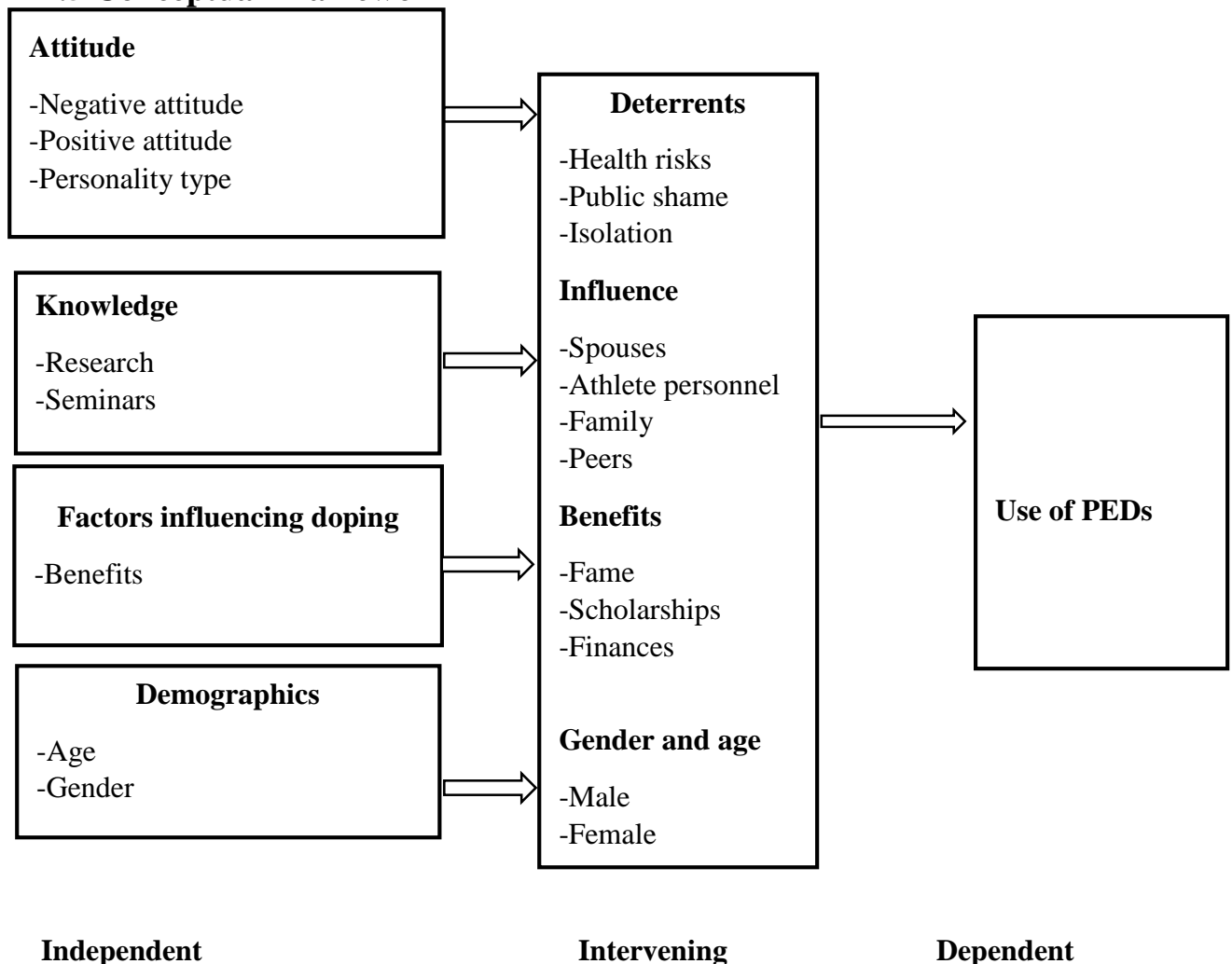
conflict, and crime, people enter a social contract with the government so that it will protect them from human predicaments. The role of the state is to enforce the social contract. Hobbes indicated that if one agrees to the social contract, that individual authorizes the sovereign to use force to uphold the social contract. But crimes may still occur even if after governments perform their duties. In this case, Hobbes argued that the punishment for crime must be greater than the benefit that comes from committing the crime. Deterrence is the reason individuals are punished for violating the Social contract, and it serves to maintain the agreement between the state and the people in the form of a workable social contract. Hobbes also pointed out that humans are rational enough to realize that the self-interested nature of people would lead to crime and inevitable conflict due to the alienation and exclusion of some members of society.

There are two basic types of deterrence: - general and specific. General deterrence is designed to prevent crime in the general population. Thus, the state's punishment of offenders serves as an example for others in the general population who have not yet participated in criminal events. It is meant to make them aware of the horrors of official sanctions in order to put them off committing crimes. Examples include the application of the death penalty and the use of corporal punishment. Specific deterrence is designed—by the nature of the proscribed sanctions—to deter only the individual offender from committing that crime in the future. Proponents of specific deterrence also believe that punishing offenders severely will make them unwilling to reoffend in the future.

Proponents of deterrence Theory believe that people choose to obey or violate the law after calculating the gains and consequences of their actions.

Borrowing from deterrence theory in criminology, Strelan and Boeckman, (2003), developed Drugs in Sports Deterrence Model (DSDM) which has factored in cost and benefits that an athlete makes a conscious decision to attain or avoid when they plan to dope. The DSDM explains that individuals make decisions based on extensive information, planning and justification to optimize their best interest. An athlete will thus think about health concerns, guilt, and satisfaction from sport achievement. An athlete will be in a dilemma to choose between improved performance, huge income from winning, fame, satisfaction, meeting expectations of others against costs such as being detected and banned from competitions, guilt, ostracism by friend, and loss of respect from significant others, Strelan & Boeckman, (2003).

## 2.5 Conceptual Framework



**Figure 2.1: Conceptual Framework**

This research was guided by a model derived from the ‘Drug Compliance in Sport model’ developed by Donovan, Egger & Kapernickl, (2002). This conceptual framework sought to facilitate compliance to regulations pertaining to use of performance enhancing drugs. The framework was derived from two scientific theories, The Theory of Planned Behavior and Deterrence Theory. The models consist of components that are likely to influence attitudes and intentions towards doping, i.e., knowledge of legitimacy of doping, threat appraisal, benefit appraisal and personal morality.

The model predicts that likelihood of doping is lowest when fear of effects is high, knowledge of benefit is mediocre, personal morality is opposed to doping, knowledge of legitimacy is high, and the reference group disapprove the use of drug. The model is stratified into four major levels that guide the procedure in conducting the research and analyzing the results. At the first level, the research examines the attitude of athletes towards use of PEDs. In the second level, the researcher seeks to determine the knowledge of PEDs by athletes. The third level tries to establish factors that influence use of PEDs and the fourth level tries to establish if there is use of PEDs by athletes in North Rift. Through questionnaires, the researcher was able to get answers to the questions raised.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Design**

This research used the survey design to investigate the problem. This design is suitable for the study because of its versatility, efficiency and ability to be generalized as recommended by Weisset al., (2001). According to him, it is the best means of developing a representative picture of the attitudes and characteristics of people. However, for a survey to be successful, two types of errors must be minimized-poor measurement of cases that are surveyed (errors of observation) and omission of cases, (errors of non-observation), Groves, (1989). To overcome these errors, appropriate sampling technique and procedures were used to identify the subjects. The instrument was subjected to validity and reliability test to minimize errors in measurement of subjects.

#### **3.2 Unit of Analysis and Unit of Observation**

The unit of analysis was the use of performance enhancing drugs by athletes. The unit of observation were athletes and key informants.

#### **3.3 Measurement of Variables**

To measure the perceptions of doping by the Kenyan athletes, a questionnaire was used to test different aspects of doping which included knowledge of prohibited substances, attitude towards PEDs and factors influencing the use of these substances. Each section was marked independently out of 100% to establish score per section. The total score for all the sections were computed and an overall mean score calculated. The research used the Performance Enhancement Attitude Scale (PEAS) developed by Petoczi, (2002), to measure the attitude of Kenyan elite runners towards doping. The PEAS is an un-

dimensional instrument first developed by Petroczi in the year (2000), Petroczi, and used it in several studies to establish its reliability, *Doping Behavioral Model*, Petroczi, (2002), *Social Desirability Effect*, Petroczi & Nepusz, (2006), *Comparing Implicit and Explicit Attitudes*, Petroczi, Aidman and Nepusz, (2008).

### **3.4 Location of the study**

The research was carried out in selected North Rift counties of Kenya. The counties identified for the study included Elgeiyo Marakwet, Uasin Gishu and Nandi because they have a high concentration of athletes. The altitude for these three counties is above 2000 Metres above sea level which is ideal for athletes to carry out their practice. The hilly terrains provide athletes with suitable training environment. Among the three counties, Uasin Gishu County was selected purposively. This was because unlike the other counties, it provided a comprehensive mix of athletes from other parts of the Country. It also has the highest altitude among the three counties which is 2500 Meters above sea level. The other reasons for choosing this one county, were because of financial implications and time constraints.

### **3.5 Target Population**

The research targeted athletes in the North Rift camps in Kenya currently registered with Athletics Kenya. Scope of events ranged from 800 meters and above, track races, cross country and marathon. This was because Kenyan athletes predominantly undertake middle- and long-distance races as opposed to short races.



### **3.6 Sample Size and Sampling Technique**

Sample size was determined by a formula developed by Yamane (1967) which sets the confidence level at 95%, p value at 0.5 and levels of precisions at  $\pm 5\%$ ,  $\pm 7\%$  and  $\pm 10\%$ .

The formula is illustrated below.

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = sample size

N = population size

e = level of precision

One of the biggest camps in Uasin Gishu, is Kaptagat. The place is a host to several athlete camps. These camps were estimated to host approximately 200 athletes at any given month as per the records and as explained by the Athlete Representative who resides in Uasin Gishu County. From the formula above, the calculated sample size consisted of 133 athletes who were active in the field during the study period. Systematic Random Sampling was used to identify the athletes from the membership register; therefore, every second athlete was interviewed. This method did not specify the number of athletes in terms of gender.

### **3.7 Research Instruments**

A questionnaire was used as the main tool of data collection. This was due to its ability to be used with a large number of population and to enquire into different variables. Bloomquist, (1985) suggests that questionnaires offer considerable advantage in its administration since one person can administer a questionnaire to a number of subjects at a time. Gay, (1985), maintains that questionnaires give respondents freedom to express their views and opinions and to make suggestions. He explains that the ability of the

questionnaires to be administered anonymously helps in getting candid answers than with interviews.

### **3.8 Validity and Reliability of Research Instrument**

A questionnaire's validity is determined by how well it measures the concept that it is intended to measure. This refers to the degree to which the study itself accurately reflects or assesses the specific concept that the research is attempting to measure, Campel, & Stanley, (1996). Mugenda, (2003), defines it as the accuracy and meaningfulness of the inferences which are based on the research results in other words, the degree to which the results obtained actually represent the phenomenon under study. The instrument was tested through the pilot study to check for clarity of questions and appropriateness in addressing research objectives. Gay (1992), defines reliability as a measure of the degree to which the research instrument yields consistent results or data after repeated trials. Cooper and Schinder, (2000), indicate that the test-retest technique enables a study to compare a research instrument over time. The test-retest involves administration of same questionnaire twice to same set of subjects at intervals.

### **3.9 Data Collection Procedure**

Once the research was approved, the researcher visited the selected county and through athlete organizers/coaches, the researcher approached athletes and took them through the research questions, explaining the purpose and scope of the research. The participants were then given the research questionnaire and asked to fill and return to the researcher. The questionnaires were collected directly from the participants.

### **3.10 Data Management and Analysis**

The questionnaires were first edited and scrutinized for errors and omissions. Data was coded and accurately entered into the Statistical Package for Social Sciences (SPSS) computer program. This data was analyzed using the program. Initial data analysis was conducted using descriptive statistics methods. This included calculations of mean, standard deviations, percentages and frequencies.

### **3.11 Logistical and Ethical Considerations**

Permission to carry out the research was sought from the University of Nairobi Ethics Committee as well as from the research participants. The nature and purpose of the research was explained to the participants prior to seeking of consent. This enabled the participants to make informed decisions on whether to participate or not. Consent forms were provided for signing prior to data collection. Privacy and confidentiality were assured.

## CHAPTER 4

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

This chapter provides the analysis and interpretations of the findings from the field. The purpose of this study was to investigate the perceptions on the use of performance enhancing drugs by athletes in the north rift counties in Kenya. Therefore, this chapter presents the analysis of data collected from the field items in the study questionnaire. The findings were analyzed and presented in the form of frequency tables, numerical values and percentages generated through SPSS computer software. The responses are presented followed by a brief interpretation guided by the research objectives and a discussion on research findings from the analysis of the data. The results are presented in tabular form for ease of understanding and interpretation.

#### 4.2 Response Rate

Response rate was critical for this study due to the fact that the fixed sample quantitative data obtained from primary data of the qualifying respondents implied that there was need for a similar response rate from the questionnaire used for the construction of the quantitative primary information. The study presented the survey questionnaire to the respondents on a personal basis to increase the response rate. From the target population, a sample of 143 respondents was picked to participate in the study. The results obtained are depicted in Table 4.1.

**Table 4.1: Questionnaire Response Rate**

Category	Questionnaires		Interviews		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Responded	130	97.7	6	60	136	95.1
Not Responded	3	2.3	4	40	7	4.9
<b>Total</b>	<b>133</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>143</b>	<b>100.0</b>

According to Table 4.1, of the 143 research instruments sent, a total of 136 of them were received back completely filled contributing to a response rate of 95.1%. On the other hand 4.9% (7) of the research instruments were received incomplete and therefore not considered in the analysis. Out of the responses obtained, 130 of them were gathered from the research questionnaires, while six (6) of them were from the interviews. According to Mugenda and Mugenda (2012) 50% response rate is adequate, 60% is good, while 70% and above is rated to be very good. According to Kothari (2013), a 50% or more response rate is adequate for analysis and making conclusions and recommendations. Consequently, 95.1 percent are excellent and satisfactory response rate warranting the researcher to continue with the analysis and interpretation. This implies that based on this assertion, the response rate of 92.3% in the case of this study is therefore good for analysis, conclusions and recommendations. From the foregoing, the response rate provided adequate data to proceed with the analysis. The use of drop and pick method, personal visits and follow-up telephone calls to the respondents, explaining the purpose of the study and its usefulness to the study population improved the response rate.

#### **4.3 Demographic Information**

Prior to the objectives guiding the study, it was of great essence to find out the background information of the respondents. The general information breaks down the features of the study population. Several aspects to describe the respondents and the organizations were used. The analysis relied on this information of the respondents so as to classify the different results according to their knowledge and responses. This was determined by looking at the gender of the respondents, their age brackets, gender, time of joining competitive athletics in Kenya and the major athletic discipline undertaken by the athletes.

### 4.3.1 Age Brackets of the Respondents

The study posed a question seeking to ascertain the composition of the respondents in terms of age. This data was sought since the age bracket of the respondents play a critical role in understanding the issues sought by the study. The results are as depicted in Table 4.2.

**Table 4.2: Age Brackets of the Respondents**

Age Bracket	Frequency	Percentage
15-20 years	9	6.9
21-25 years	59	45.4
26-30 years	47	36.2
Above 30 years	15	11.5
<b>Total</b>	<b>130</b>	<b>100.0</b>

From the study, 45.4% of the population studied was made up of people aged between 21 and 25 years. In addition, 36.2% of the respondents reiterated that they were aged between 26 and 30 years, 11.5% of the populace comprised of people aged above 30 years, while 6.9% of them were aged between 15 and 20 years. These results demonstrated that the respondents were well distributed in terms of age hence different views across varying ages are accounted for.

### 4.3.2 Gender of the Respondents

The research sought to find out the gender of the respondents. The subject of gender is considered fundamental in this study largely because it could help the researcher get a balanced view from both genders. As such, the study required the respondents to indicate their gender by ticking on the spaces provided in the questionnaire. Table 4.3 shows the distribution of the respondents by gender.

**Table 4.3: Gender of the Respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	98	75.4
Female	32	24.6
<b>Total</b>	<b>130</b>	<b>100.0</b>

From the study, 75.4% of the respondents were male respondents while 24.6% of them were females. This implied that the number of male respondents were more than the female respondents. These results show that the athletes in the north rift counties comprised both males and females and views expressed in these findings could be taken as representative of the opinions of both genders. The views expressed in these findings are gender sensitive and can be taken as representative of the opinions of both genders since gender plays a crucial role in shaping the perceptions about performance enhancing drugs, challenges and knowledge of testing.

#### **4.3.3 Time of Joining Competitive Athletics**

The respondents were further asked to indicate the time when they first joined the competitive athletics in Kenya. The responses gathered were summarized in Table 4.4.

**Table 4.4: Respondents' Time of Joining Competitive Athletics**

<b>Time of Joining Athletics</b>	<b>Frequency</b>	<b>Percentage</b>
2010 or Earlier	21	16.2
2011 to 2012	43	33.1
2013 to 2014	35	26.9
2015 to 2017	17	13.1
2018 and later	13	10.0
<b>Total</b>	<b>130</b>	<b>100.0</b>

From the study, 33.1% of the respondents recalled that they joined competitive athletics between year 2011 and year 2012. This was followed by 26.9% of the respondents who joined athletics between years 2013 and 2014. 16.2% of the responses were drawn from

athletes who joined the career during year 2010 or prior. 13.1% of the respondents started their career between year 2015 ad 2017, while 10% of them reiterated that they joined active athletics from year 2018 or later. These results implied that most of the respondents had been participating in competitive athletics for a period of at least five years hence better placed in responding to the issues sought by the study.

#### **4.3.4 Major Athletic Discipline**

The respondents were required to indicate the major athletic discipline they undertook in their careers. Most of the respondents indicated that they participate in middle and long-distance races and track and field races such as marathon, 10,000 meters, 5,000 meters 1500 meters and 800 meters. Others participated in short races such as, 400 meters, 200 meters and 100 meters in addition to the middle and long-distance races. This is an implication that the respondents were drawn from various athletic disciplines which are likely to show varying levels of awareness of performance enhancing drugs.

#### **4.4 Assessment of Attitude of Athletes towards Performance Enhancing Drugs**

The study sought to examine the attitude of North Rift athletes towards use of performance enhancing drugs. In this regard, the respondents were provided with various statements showing the Athletes' believe about doping and asked to indicate their agreement levels with the same.



**Table 4.5: Agreement with Statements on performance enhancing drugs**

<b>Statement about attitudes towards PEDs</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Mean</b>
Doping is necessary to win competitive sports.	0	5.4	23.08	30.0	41.5	1.9237
Athletes lose time due to injuries and drugs help to make up for the time lost.	3.1	6.9	23.85	33.1	33.1	2.1387
Everyone who wins uses drugs, so it is not cheating.	1.5	6.2	24.62	46.9	21.5	2.2153
Best achievement should matter, not how an athlete achieves it.	6.2	13.1	26.15	35.4	19.2	2.5186
Athletes are under pressure from significant others to use performance enhancing drugs	2.3	7.7	25.38	39.2	25.4	2.2230
Athletes should not feel guilty for using performance enhancing drugs	3.1	8.5	23.08	42.3	23.08	2.2642
People exaggerate the risks related to use of performance enhancing drugs	0.8	2.3	21.54	52.3	23.1	2.0551
Athletes don't have other sources of income except in sports so they must perform	19.2	25.4	26.92	10.8	18.5	3.1837
Performance enhancing drugs should be legalized	0	1.5	23.08	47.7	28.5	1.9908
It is okay to use performance enhancing drugs if you don't get caught	0	1.5	21.54	52.3	24.6	1.9985

From the study, most of the responses showed partially agreed and partially disagreed that athletes don't have other sources of income except in sports so they must perform as shown by a mean score of 3.1837 and that best achievement should matter, not how an athlete achieves it as shown by a mean score of 2.5186. However, there was outright disagreement on that athletes should not feel guilty for using performance enhancing drugs as shown by a mean score of 2.2642, athletes are under pressure from significant others to use performance enhancing drugs as shown by a mean score of 2.2230, everyone who wins

uses drugs so it is not cheating as shown by a mean score of 2.2153 and that athletes lose time due to injuries and drugs help to make up for the time lost as shown by a mean score of 2.1387. there was a further discord on that people exaggerate the risks related to use of performance enhancing drugs, it is okay to use performance enhancing drugs as long as one doesn't get caught, performance enhancing drugs should be legalized and that doping is necessary to win competitive sports as shown by mean scores of 2.0551, 1.9985, 1.9908 and 1.9237 respectively. These results reveal that the athletes have negative attitudes toward use of drugs for enhancing their performance in athletics.

#### **4.5 Knowledge of Performance enhancing drugs and Testing procedures**

The second objective of this study sought to determine the knowledge of performance enhancing drugs among athletes in North Rift. As such the respondents were provided with statements about knowledge of performance enhancing drugs and asked to indicate their level of agreements.

**Table 4.6: Agreements with statement on knowledge of PEDs among Athletes**

<b>Statements on knowledge of PEDs</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Mean</b>
I am aware of all WADA rules about doping	23.1	30.0	41.5	5.4	0	3.7080
I know that there is a testing Authority in Kenya	6.9	33.1	33.1	23.85	3.1	3.1683
I can be tested anywhere and anytime	6.2	21.5	46.9	24.62	1.5	3.0865
I need to fill a Therapeutic Use Exemption form if I am on medication	26.2	19.2	35.4	13.1	6.2	3.4625
I should get treatment from qualified doctors only	7.7	25.4	39.2	25.4	2.3	3.1080
It is my responsibility to let the doctor know that I am an athlete before being treated	23.1	23.08	42.3	8.5	3.1	3.5472
PEDs include all the illegal drugs and substances and some prescription drugs	23.1	21.54	52.3	2.3	0.8	3.6386
I cannot refuse to provide a sample once I have been notified	26.9	25.4	19.2	18.5	10.8	3.4151
I can be tested both in and out of competition	23.1	28.5	47.7	1.5	0	3.7531
I should record all the medications and supplements that I use when my sample is being collected	21.5	24.6	52.3	1.5	0	3.6608

According to the results depicted in Table 4.6, most of the respondents affirmed that they can be tested both in and out of competition as shown by a mean score of 3.7531, they were aware of all WADA rules about doping as shown by a mean score of 3.7080, they should record all the medications and supplements that they use when their samples are being collected as shown by a mean score of 3.6608, PEDs include all the illegal drugs and substances and some prescription drugs as shown by a mean score of 3.6386 and it is their responsibility to let the doctor know that they are athletes before being treated as shown by a mean score of 3.5472. However, there was neutrality in that the athletes need

to fill a Therapeutic Use Exemption form if they were on medication, they cannot refuse to provide a sample once they have been notified, they knew that there is a testing Authority in Kenya, they should get treatment from qualified doctors only and that they can be tested anywhere and anytime as shown by mean scores of 3.4625, 3.4151, 3.1683, 3.1080 and 3.0865 in that order. These results imply that there is a considerable amount of knowledge regarding drug use among athletes.

#### **4.6 Factors that Influence Use of Performance Enhancing Drugs among Athletes**

The study further sought to establish factors that influence the practice of doping among the athletes. The respondents were thus required to identify the various factors that best represent the reason why Kenyan athletes would practice doping.

**Table 4.7: Factors that Influence use of PEDs among Athletes in Kenya**

Factors influencing use of PEDs	Yes		No		Not sure	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Financial gains that boost economic status of the athlete	26	20.0	81	62.3	23	17.7
Pressure from Coaches and Managers to perform	27	20.8	78	60.0	25	19.2
Seeing the success of athletes who used drugs and were not caught	30	23.1	91	70.0	9	6.9
Lack of confidence even after practicing hard	48	36.9	59	45.4	23	17.7
Fame that comes with winning a race	54	41.5	34	26.2	42	32.3
Lack of knowledge on health risks that come with drug use	43	33.1	66	50.8	21	16.2
Lack of knowledge on sanctions that come with being found to have used drugs	61	46.9	42	32.3	27	20.8
Alleviating poverty in my family	46	35.4	68	52.3	16	12.3
Lack of employment and lack of other sources of income	61	46.9	50	38.5	19	14.6
Not everyone gets tested so I may escape and win a prize	65	50.0	49	37.7	16	12.3

According to the results depicted in Table 4.7, 50% of the respondents indicated that not everyone gets tested so they may escape and win a prize as a reason to why Kenyan athletes would practice doping as compared to 37.7% of those who disapproved this as a cause for doping while 12.3% of them were not sure of whether this could be a determinant or not. 46.9% of the responses showed that lack of knowledge on sanctions that come with being found to have used drugs, 32.3% of the respondents indicated a contrary view, while 20.8%

of them were unsure. 46.9% of the respondents affirmed that lack of employment and lack of other sources of income was a reason as to why Kenyan athletes would practice doping while 38.5% of them indicated a contrary view. 41.5% of the responses revealed that fame that comes with winning a race was a motivating factor for Kenyan athletes to practice doping, while 26.2% of them contrasted with this view. The undecided portion comprised of 32.3% of the respondents. According to 36.9% of the respondents, lack of confidence even after practicing hard was a reason for Kenyan athletes to practice doping, whereas 45.4% of them indicated otherwise leaving 17.7% of the respondents unsure of whether lack of confidence could contribute to doping among athletes. 35.4% of the respondents felt that alleviating poverty in their families was a reason as to why Kenyan athletes would practice doping. 52.3% of the respondents showed a contrary view to the same factor while 12.3% of the responses were impartial. In addition, 50.8% of the respondents disputed lack of knowledge on health risks that come with drug use, 70.0% of the responses faulted seeing the success of athletes who used drugs and were not caught could lead to practice of doping among athletes, 60.0% of the respondents denied that pressure from coaches and managers to perform was a reason for doping and 62.3% of the respondents showed disagreement that financial gains that boost economic status of the athlete could motivate doping practice among athletes in Kenya. From these findings, it was evident that there exist a number of factors that can motivate doping practice among athletes emanating from socio-economic aspects to knowledge and attitudes.

#### **4.7 Assessment of Doping Practices Among Athletes**

The study also sought to assess the doping practices among athletes through various questions provided. Table 4.8 shows the results obtained.

**Table 4.8: Assessment of Doping Practices among Athletes**

Statement	Yes		No		Not sure	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Do you think there is a problem of doping in your sport?	33	25.4	76	58.5	21	16.2
Have you ever refused or failed to go to a doping control station after being notified?	23	17.7	83	63.8	24	18.5
Has anybody ever encouraged you to use Performance enhancing drugs?	11	8.5	106	81.5	13	10.0
Would you use drugs if your Team Doctor or your Physiotherapist recommended them to you?	39	30.0	79	60.8	12	9.2
Do you know of a successful athlete who won by using PEDs?	6	4.6	58	44.6	66	50.8
Have you ever been found with drugs or trafficking it?	0	0.0	126	96.9	4	3.1
Have you ever used drugs knowingly or unknowingly?	9	6.9	109	83.8	12	9.2
Do you know of any athlete camp who encourage their athletes to use drugs?	11	8.5	103	79.2	16	12.3
Have you ever heard of a chemist, a medical practitioner or agents that supply performance enhancing drugs in your country?	8	6.2	116	89.2	6	4.6
Would you use drugs if you were sure you will not get caught?	34	26.2	91	70.0	5	3.8

From the study, an overwhelming 60.8% of the respondents recapped that they would not use drugs even if their team doctors or their physiotherapists recommended them. This contrasted 30.0% of those who indicated that they would use PEDs if recommended by such experts. 70.0% of the respondents would not use drugs even if they were sure they

will not get got, while 26.2% of them would. 58.5% of the respondents pointed that they never thought there was a problem of doping in their sport, while 25.4% of them thought otherwise. 63.8% of the respondents have never refused or failed to go to a doping control station after being notified, while 17.7% of them failed or refused to report to doping control station. 81.5% of the respondents reiterated that nobody had ever encouraged them to use performance enhancing drugs, while 8.5% of them affirmed that some people had encouraged them to use PEDs. 79.2% of the responses showed that the athletes did not know of any athlete camp who encouraged their athletes to use drugs, whereas 8.5% of the respondents indicated that they knew such a camp. The responses also showed that 83.8% of the respondents had never used drugs knowingly or unknowingly. On whether the athletes had heard of a chemist, a medical practitioner or agents that supply performance enhancing drugs in the County, 89.2% of the respondents indicated that they were not aware of any while 6.2% of them were aware of such. 44.6% of the respondents indicated that they didn't know of a successful athlete who won by using PEDs as compared to 4.6% of those who indicate that they actually knew such athletes. 96.9% of the respondents unanimously pointed they had never been found with drugs or trafficking it. These results showed that there had been few or no known cases of use of performance enhancing drugs, the athletes are less willing to be involved in doping and there had been few or no cases of trafficking of doping drugs among the Kenyan athletes.

#### **4.8 Athlete's Recommendations**

The respondents were required to indicate what they thought about how doping Information should be disseminated to all athletes. Most of the respondents encouraged their fellow athletes not to use PEDs. The government should help athletes by providing



them with good facilities like stadiums for training purposes, the officials and sponsors should embrace kindness in their activities by paying the athletes when they win the race, The government should set up tough rules to deal with doping and to educate the athletes about the dangers of doping. In addition, the sponsors should always stick to making sure that the athletes are running clean and create awareness about the drugs that are not supposed to be used by the athletes. The respondents also recommended their fellow athletes to avoid doping since it has health effects. The athletes should fill the required forms whenever they are required to do so and the government should visit the athletes' camps and organize seminars for enlightening the athletes about the effects of doping.

#### **4.9 Key informants**

The researcher interviewed 10 key informants. These included, a Team Manager, a Coach, an Athlete Representative, an Athletics Kenya official, an Athlete Manager, a Team Doctor, a Physiotherapist, a Nutritionist, a Psychologist and an ADAK officer. These key informants were interviewed using a key informant guide using the face to face technique.

The Key Informants were to give Qualitative type of data to supplement the research findings. The Key Informants were interviewed between 15<sup>th</sup> and 20<sup>th</sup> of September, 2019 in Uasin Gishu County. The interview aimed at identifying personal views, challenges and possible solutions of athletes who use or might think of using the performance enhancing drugs.

On the question of whether they thought that doping was rampant among athletes, *all the interviewees affirmed that there was a problem. They explained that the rate at which athletes were failing the tests was worrying. Responded no. 10, said, "I think these people think the winners must be using drugs, so you can use and not be found."*

When the question, “What contributes to doping among athletes?” was posed, *most of the interviewees mentioned that need for money, fame and lack of confidence were the leading factors. Respondent No. 7 wrote, “You know, most of these runners are jobless, so they want to win to get money.” Respondent no. 6 said “When these people get injured, they still want to participate in sports, therefore, they will take anything to reduce pain.”*

On the question, “Do you think athlete officials are involved in supplying doping substances to athletes?” The interviewees were divided on their opinions. *Some denied that this could happen, yet others said it was possible but non-committal. For example, Respondent no 2, wrote, “I do not think that officials can do this, you know, they can also lose their jobs.” Respondent no. 3 said, “It is possible, some of the drugs are not readily available, so someone could be providing to athletes.”* There was no clear consensus on the above question among all the interviewees.

When the question, “Do you think some of the supplements used by athletes are laced with drugs?”, majority of the respondents agreed with it. *They said that most of the athletes if not all, were using supplements. They were not sure where some athletes got their supplements, but a few would buy from shops. Respondent no 8 said “athletes believe that the best nutrition is in the supplements.” Respondent no. 9 wrote, “these athletes have a set mind that if they don’t use supplements, they cannot perform.”*

The question, do you think the Ministry of Sports is doing enough to stop athletes from using drugs? *Most of the respondents denied that the Ministry was doing enough. A few supported the Ministry. Those who supported said as per Respondent no. 4, “the government has put in place an organization like ADAK to train and test athletes? This is good enough.” Respondent no 10 also said, “ADAK have sensitized most athletes on*

*doping issues.” The ones who believe that the government was not doing enough gave their reasons as, according to Respondent no. 2 “the Ministry does not pay athletes on time, it can take 3 years before they are paid. Respondent no 5 said “the Anti-Doping Organization is trying but they have not reached all the athletes.*

## **CHAPTER 5**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the research findings on the perceptions on the use of performance enhancing drugs by athletes in Kenya. It also presents the project title with a direct link between the variables and the findings to the empirical and theoretical literature review in the study. The chapter ends with recommendations for the research and suggestions for further research to fill gaps identified as important by the researcher.

#### **5.2 Summary of Findings**

The study found neutrality that athletes don't have other sources of income except in sports so they must perform, and that best achievement should matter, not how an athlete achieves it. There was disagreement on that athletes should not feel guilty for using performance enhancing drugs, athletes are under pressure from significant others to use performance enhancing drugs, everyone who wins uses drugs so it is not cheating, athletes lose time due to injuries and drugs help to make up for the time lost, people exaggerate the risks related to use of performance enhancing drugs, it is okay to use performance enhancing drugs as long as one doesn't get caught, performance enhancing drugs should be legalized and that doping is necessary to win competitive sports. The study established that there is a problem of rampant doping among the athletes.

The study found that the athletes have high knowledge of performance enhancing drugs. There was agreement that athletes can be tested both in and out of competition, they were aware of all WADA rules about doping, they should record all the medications and supplements that they use when their samples are being collected, PEDs include all the

illegal drugs and substances and some prescription drugs and it is their responsibility to let the doctor know that are athletes before being treated.

From the study some athletes feel that not everyone gets tested so they may escape and win a prize, lack of knowledge on sanctions that come with being found to have used drugs, lack of employment and lack of other sources of income, fame that comes winning a race, lack of confidence even after practicing hard, need for alleviating poverty in their families and lack of knowledge on health risks that come with drug use are some of the reasons why Kenyan athletes would practice doping. Other possible reasons include seeing the success of athletes who used drugs and were not caught, pressure from coaches and managers to perform and financial gains that boost economic status of the athlete.

Most of the respondents indicated that they would not use drugs even if their team doctors or their physiotherapists recommended for them, they would not use drugs even if they were sure they will not get caught, they never thought there was a problem of doping in their sport, they have never refused or failed to go to a doping control station after being notified, nobody has ever encouraged them to use performance enhancing drugs and the athletes did not know of any athlete camp who encouraged their athletes to use drugs. In addition, they have never used drugs knowingly or unknowingly, they were not aware of any chemist, a medical practitioner or agents that supply performance enhancing drugs in the County, they didn't know of a successful athlete who won by using PEDs and they have never been found with drugs or trafficking it.

### **5.3 Conclusion**

The study concludes that the athletes have negative attitudes toward use of drugs for enhancing their performance in athletics. From the study, doping is not necessary to win competitive sports, athletes are not under pressure from significant others to use performance enhancing drugs, athletes should feel guilty for using performance enhancing drugs and performance enhancing drugs should not be legalized. However, lack of knowledge is a contributing factor to doping problems.

The study deduces that there is a considerable amount of knowledge regarding drug use among athletes. However, there remains unclear picture on whether the athletes need to fill a Therapeutic Use Exemption form if they were on medication, the athletes cannot refuse to provide a sample once they have been notified, they knew that there is a testing Authority in Kenya, the athletes should get treatment from qualified doctors only and that they can be tested anywhere and anytime.

The study concludes that there exist a number of factors that can motivate doping practice. They include lack of knowledge of the prohibited substance, urgent need of money and success, need to alleviate poverty in their families and pressure to perform are the key aspects that contribute to doping among athletes.

The study also deduces that there has been few or no known cases of use of performance enhancing drugs, the athletes are less willing to involve in doping and there has been few or no cases of trafficking of doping drugs among the Kenyan athletes. The key informants were unaware of officials that are involved in supply of doping substance.

#### **5.4 Recommendations**

The study recommends the government to help athletes by providing them with good facilities like stadiums for training purposes, the officials and sponsors should embrace kindness in their activities by paying the athletes when they win the race, the government should scale up tough rules to deal with doping and to educate the athletes about the dangers of doping. In addition, the sponsors should always stick to making sure that the athletes are running clean and create awareness about the drugs that are not supposed to be used by the athletes, the athletes should fill the required forms whenever they are required to do so and the government should visit the athletes' camps and organize seminars for enlightening the athletes about the effects of doping.

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# APPENDICES

## QUESTIONNAIRE

My name is Sarah C. Koske. I am a Master's student at the University of Nairobi, Department of Sociology and Social Work. I am currently undertaking a research for the fulfillment of the requirements of this degree.

I need to find out what you know and think about performance enhancing drugs, challenges and knowledge of testing. Please complete this questionnaire to the very best of your knowledge and return it to the interviewer/researcher. I wish to assure you that your responses will remain confidential and that nothing that appears in the final report will be attributed to any individual athlete.

### Demographic Information

1. What is your age bracket (in years)?
  - a) 15-20
  - b) 21-25
  - c) 26-30
  - d) Above 30
2. What is your gender?
  - a) Male
  - b) Female

When did you first join the competitive athletics in Kenya?

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What is your major Athletic Discipline?

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### Assessment of Attitude of Athletes Towards Performance Enhancing Drugs

The statements below represent what athletes may believe about doping. Please tick one box of a corresponding statement that best suits your view. There is no right or wrong answer.

Statement	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Doping is necessary to win competitive sports.						
Athletes lose time due to injuries and drugs help to make up for the time lost.						
Everyone who wins uses drugs so it is not cheating.						
Best achievement should matter, not how an athlete achieves it.						
Athletes are under pressure from significant others to use performance enhancing drugs						
Athletes should not feel guilty for using performance enhancing drugs						
People exaggerate the risks related to use of performance enhancing drugs						
Athletes don't have other sources of income except in sports so they must perform						
Performance enhancing drugs should be legalized						
It is okay to use performance enhancing drugs as long as you don't get caught						

## Knowledge of Performance enhancing drugs and Testing procedures

Please tick appropriately according to your opinion on the statements below.

Statement	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
I am aware of all WADA rules about doping						
I know that there is a testing Authority in Kenya						
I can be tested anywhere and anytime						
I need to fill a Therapeutic Use Exemption form if I am on medication						
I should get treatment from qualified doctors only						
It is my responsibility to let the doctor know that I am an athlete before being treated						
PEDs include all the illegal drugs and substances and some prescription drugs						
I cannot refuse to provide a sample once I have been notified						
I can be tested both in and out of competition						
I should record all the medications and supplements that I use when my sample is being collected						

### Factors that Influence use of Performance Enhancing Drugs among athletes

Which of the following factors represent the reason why Kenyan athletes would practice doping?

Statement	Yes	No	Not sure
Financial gains that boost economic status of the athlete			
Pressure from Coaches and Managers to perform			
Seeing the success of athletes who used drugs and were not caught			
Lack of confidence even after practicing hard			
Fame that comes with winning a race			
Lack of knowledge on health risks that come with drug use			
Lack of knowledge on sanctions that come with being found to have used drugs			
Alleviating poverty in my family			
Lack of employment and lack of other sources of income			
Not everyone gets tested so I may escape and win a prize			

## Assessment of Doping Practices Among Athletes

Please tick in a box against every statement with either Yes, No or not sure

Statement	Yes	No	Not sure
Do you think there is a problem of doping in your sport?			
Have you ever refused or failed to go to a doping control station after being notified?			
Has anybody ever encouraged you to use Performance enhancing drugs?			
Would you use drugs if your Team Doctor or your Physiotherapist recommended them to you?			
Do you know of a successful athlete who won by using PEDs?			
Have you ever been found with drugs or trafficking it?			
Have you ever used drugs knowingly or unknowingly?			
Do you know of any athlete camp who encourage their athletes to use drugs?			
Have you ever heard of a chemist, a medical practitioner or agents that supply performance enhancing drugs in your country?			
Would you use drugs if you were sure you will not get caught?			



**Athlete's Recommendations**

How do you think Doping Information should be disseminated to all athletes?

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In your opinion, how should the government of Kenya help in preventing/reducing the Doping Menace?

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## KEY INFORMANTS GUIDE

### Introduction

This interview aims to identify challenges and possible solutions of athletes who use or may think of using performance enhancing drugs

### Please tick your role in the Athletic field.

- |                           |                          |                    |                          |
|---------------------------|--------------------------|--------------------|--------------------------|
| 1. Team Manager           | <input type="checkbox"/> | 6. Team Doctor     | <input type="checkbox"/> |
| 2. Coach                  | <input type="checkbox"/> | 7. Physiotherapist | <input type="checkbox"/> |
| 3. Athlete Representative | <input type="checkbox"/> | 8. Nutritionist    | <input type="checkbox"/> |
| 4. AK Official            | <input type="checkbox"/> | 9. Psychologist    | <input type="checkbox"/> |
| 5. Athlete Manager        | <input type="checkbox"/> | 10. ADAK Officer   | <input type="checkbox"/> |

1. In your opinion do you think doping is rampant among athletes?.....

Explain .....

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2. What contributes to doping among athletes?

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3. Do you think some athlete officials are involved in supplying doping substances to athletes?

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4. Do you think some of the supplements used by athletes are laced with drugs?

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5. Do you think The Ministry of Sports is doing enough to stop athletes from using drugs?

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