

**INFLUENCE OF SPORTS DISCIPLINES AND DEMOGRAPHICS OF
KENYA'S COLLEGES ATHLETES ON THEIR AWARENESS,
PERCEPTION AND ATTITUDE TO PERFORMANCE-ENHANCING
SUBSTANCES USE**

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DECLARATION

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

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DEDICATION

This work is dedicated to my son, Mathenge, whose pursuit of education has been hampered by a condition he has no control of despite putting a lot of effort in academics.

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ABBREVIATIONS AND ACRONYMS

AAS	Anabolic Androgenic Steroid
AK	Athletics Kenya
DSCM	Drugs in Sport Compliance Model
DSDM	DRUGS in Sport Deterrence Model
FIBA	Federation of International Basketball Associations
FIFA	Federation of International Football Associations
IAAF	International Association of Amateur Federations
IOC	International Olympic Committee
KTCSA	Kenya Teachers Colleges Sports Association
KFL	Kenya Football League
NCST	National Council for Science and Technology
NACADA	National Authority for the Campaign against Alcohol and Drug Abuse
NCCA	National Collegiate Sports Association
NOCK	National Olympic Committee of Kenya
PE	Physical Education
PES	Performance Enhancing-Substance
PEAS	Performance Enhancement Attitude Scale
TPB	Theory of Planned Behavior
RADO	Regional Anti-Doping Organization
TUE	Therapeutic Use Exemption
UNESCO	United Nations Education Scientific and Cultural Organization
USA	United States of America
WADA	World Anti-Doping Agency
WADC	World Anti-Doping Code

OPERATIONAL DEFINITION OF TERMS

“In this study the following terms apply as defined”.

Athlete: A Kenyan male or female teacher trainee participating at the National athletics and ball games competitions of the Kenya Teachers College Sports Association. In this study the term athlete was used interchangeably with the term player.

Attitude: Extent to which an athlete agrees or disagrees with various beliefs and opinions about use of sports performance-enhancers

Ballgames: Refers to games that were competed in this study, which included soccer, volleyball, hockey, handball, netball and basketball.

Banned Substances: Chemical compounds listed in the World anti-Doping Code as illegal to use in sports. These included marijuana, caffeine, anabolic steroid, cocaine, Khat, (*miraa*) alcohol and, bhang.

Competition Experience: Number of years an athlete has participated in sports competitions at national level.

Doping: Use of prohibited substance or technique/method to enhance sports performance. These may include use of blood doping, Khat (*miraa*) and use of steroids.

Fibre glass pole: A flexible pole used by athletes in pole vault event to jump over a bar at varying height.

Gender: Male or female athlete participating in Kenya Teachers Colleges ballgames and track and field athletics.

Awareness: Information and understanding an athlete has regarding doping. These include information on the banned substances, the requirements of the WADA code and the effects of the drugs and substances to athletes' health.

Khat (miraa): A plant whose fresh leaves and twigs are chewed to release some juice that contains cathinone and cathine, the active chemicals that affect the mood of the user.

Performance-enhancing: use of substances/drugs by an athlete with the sole intention of improving sports performance; cope with stress or for recreation purpose.

Perception: Opinion and understanding of athletes about the use and effects of performance-enhancing drugs/substances in sports.

Track events: Running races such as, 100m, 200m, 3000 steeplechase and 10,000m

Field events: throwing and jumping skills which include shot put, discus, long jump, high jump,

Type of sport: the category of sport an athlete competes in, including a ballgame, track, or field event.

ABSTRACT

Sports competition has increasingly attracted a huge number of participants both at amateur and professional level. In attempt to win huge prize money, trophies and fame, some athletes do not hesitate to use whatever means at their disposal to meet their goal to improve performance. While anti-doping regulations have been established by WADA, cases of illegal substances and methods continued to be reported. Kenyan athletes implicated with doping have claimed lack of knowledge or awareness on the illegal substances. This study therefore purposed to establish the influence of demographics on Kenya teachers colleges athletes' awareness, perception and attitude to performance-enhancing substance use in sports. A cross-sectional survey design was used, where dependent variables were awareness, perception and attitude to doping and independent variables included experience in competition, gender, and type of sport. The study was carried out in three randomly selected competition zones of Kenya Teachers Colleges Sports Association (KTCSA). These were coast, Central and Rift Valley. The study sample comprised 696 athletes participating at the 2012 national ball games and track and field athletics of which 480 were ballgames players (male 240 and female 240) and 216 track and field athletes (108 males and 108 females). A self-administered questionnaire was used to collect data. Data was organized and described using frequencies, percentages, means and standard deviations. Chi-square was used test for the association between athletes' awareness and perception of Performance-enhancing substance use and gender, competition experience and type of sport while independent t-test was computed to establish the differences in athletes' attitude to doping by gender. One-way analysis of variance (ANOVA) was computed to test for the difference in attitude to doping among athletes with varying competition experience and in types of sport. There was no significant relationship between athletes awareness and perception to doping based on gender $\chi^2=1.55, P=0.21$, competition experience $\chi^2=4.59, p=0.20$ and type of sport $\chi^2=7.15, p=0.03$. There was no significant association between perception of doping and gender $\chi^2=0.20, p=0.66$, competition experience $\chi^2=2.08, p=0.56$ but there was association by type of sport $\chi^2=12.66, p=0.01$. There were no significant differences in attitudes based on gender $t=0.10, p=0.32$. No differences in attitude amongst athletes based on competition experience $F=0.20, p=0.89$. Significant differences were established amongst athletes in different sports $F=12.60, p=0.01$. Scheffe test showed difference in attitudes between track and field athletes and ballgames players. College athletes' awareness of doping was not adequate, perception was wrong by track and field and attitude to performance-enhancing substance use positive. College athletes should be educated on doping in order to create awareness, change perceptions and their attitudes to PES use in sports at all levels of competitions.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

According to Bucher and Wuest (1999), youth participation in organized sport activities in and out of school settings under guidance of public and private agencies has grown tremendously. They observe that enrollment in commercial sports is on the rise especially in urban settings while specialization has allowed many individuals who excel at amateur level to participate as professionals. Furthermore, salaries of professional participants have increased drastically turning sport into a multi- million dollar industry, causing every athlete a lot of pressure from self and from other interested parties such as family, sports federations, athletes' managers, sponsors and citizens (Bucher & Wuest, 1999).

Involvement in sport should make young people improve their self-esteem, be able to handle stress, express talents and get to know one's body better. However, United Nations, (2002) reports that when over-emphasized, sport can snatch fun from participation, make it unattractive to the ones who look for fun in sport, confer undue stress to an individual and may make performance enhancing substances (PES) attractive. Results of the sports participation such as rewards and trophies should be a by-product and not the focus (United Nations, 2002).

In order to benefit the participant and spectator, rules have always been set to govern the conduct of specific sports. In line with this view, Graf-Baumann,(2006) observes that the ancient Greeks set strict rules that had to be met before anyone could participate as a competitor in the ancient Olympic Games. One such rule required that the contestants train for not less than ten months because physical unfitness was not a good excuse. It was also a requirement that the contestants and their fathers, siblings and trainers swear an oath that they would not use illegal tactics to win (Bucher &

Wuest, 1999). Ironically, the use of performance - enhancing drugs dates back again to ancient Greece. Graf-Baumann, (2006) has noted that athletes used special diets and stimulating portions to enhance performance while cyclists and endurance athletes used substances such as caffeine, cocaine and alcohol in the nineteenth century. Graf-Baumann (2006), further explains that effects of the use of drugs were felt as early as 1886, when Arthur Linton, a cyclist died after taking an overdose of Tri-methyl. By 1904, the modern sport was already experiencing the effects of doping when Thomas Hicks, a victorious Olympic athlete won a race with assistance of raw eggs, injections of strychnine and doses of brandy administered into his body (Graf-Baumann, 2006). Danish cyclist, Knud- Enermark Jensen, died during the 1960 Olympic Games in Rome and subsequent autopsy revealed traces of amphetamine (Graf-Baumann, 2006).

A call to eliminate the use of performance - enhancing drugs by sports organizations such as International Olympic Committee (IOC), International Association of Athletics Federations (IAAF) and, World-Anti Doping Agency (WADA) aims at ensuring respect for sports ethics, protecting the health of the athlete and to allow level playing field. Tougher measures are taken against the banned substance users, ranging from suspension from participation for a certain period of time to a life ban (WADA, 2014).

Insel and Roth (2002) indicate that the use of performance-enhancing substances is a problem that affects male and female athletes in ballgames and track and field athletics as well as active individuals in amateur and professional sports. A survey of United States of America (USA) college athletes as reported by Corbin, Corbin, Welk & Lindsey (2004) indicated that 29% of American football players, (21% of men and

16% of women track athletes) voluntarily admitted to having used performance-enhancing substances.

Participants are also reported to start using performance - enhancing substances (PES) at varying ages. A study by Lubna, Noor, Almuthana, Iman, Maher, & Saler, (2008) amongst Jordanian college students and athletes, reported that attitude, access and exposure to performance-enhancing drugs drastically change between ages 12 and 13 years. Athletes of age 13 years are reported to be three times more likely to know teenagers who use or sell drugs and knew how to access banned drugs. Lubna et al., (2008) have further noted that a third of athletes have used drugs before the age of 15 years. A significant positive attitude towards doping by male athletes than their female counterparts has been reported in different studies (Peretti-Watel, Guagliardo, Vreger, Mignon, Pruvost, & Obadia (2004), Alaranta, Alaranta, Holmila, Palmu, & Helenius 2006, Kirby, Moran, Gueri & Macintyre, 2008 and, by Lucidi, Zelli, Mallia, Grano, Russo, & Violani, 2008)).

Athletes are said to be consumers of variety of drugs and for various reasons. Some do so for recreation purpose while others ingest with the sole intention of enhancing performance. Green, Uryasz, Todd, & Corey (2001) carried out a study to determine the substance- use pattern among the USA 13,914 male and female national collegiate athletes for selected drugs/substances and established that alcohol was the most widely used drug at 80% followed by marijuana 28.4% and anabolic steroid at 1.1%. Participants reported to have accessed the steroids through the physician but other than the institution's team physician. Athletes with least competition experience were found to be pronounced consumers of alcohol. The study further reports that athletes believed that alcoholic beverages do not affect sports performance and their general health. Another study on college athletes by the National Collegiate Athletics

Association (NCAA, 2006) established that athletes used anabolic steroids to improve athletics performance, for the treatment of injury, while a number of respondents still believed that use of alcoholic beverages had no effect on sports performance. However majority of respondents believed that drug testing by the sports association and their respective institutions had deterred college athletes from doping. Participants also were of the opinion that athletes who dope should be punished but the punishment should be fair and appropriate. Further, NCAA, (2006) noted that friends and relatives supplied athletes with drugs but athletes could also order for the drugs via website or email.

Teachers are reported to come in handy in guiding high school athletes in making decisions in sports competitions especially because young athletes are influenced by muscularity and thinness concerns (Zelli, Lucidi, & Mallia, 2010). Zelli et al. (2010) noted that boys who participated in sports and were concerned with muscularity displayed positive attitude to doping than girls.

Lack of awareness and wrong perception of doping among 198 polish Olympic aspiring athletes is reported in a study by Feinberg (2009). In the study, athletes are reported to reckon they would take illegal drugs, if it would guarantee victory and if they would not be detected. Further the study reports that half of the subjects indicated that they would use drugs, if it would guarantee victory for 5 years even though it would eventually lead to death. Athletes with few years of sports competition experience (less than 3 years) also portrayed lack of awareness and negative attitude towards doping than those with longer competition experience. Furthermore, athletes in team sports such as soccer, basketball, handball and volleyball indicate more awareness, right perception and negative attitude towards doping than track and field athletes (Nowesielski & Swistkowska, 2007). Likewise, a

cross-sectional survey of 196 British athletes by Somerville and Lewis (2004) that aimed to establish accidental breaches on doping regulations reports 65% of athletes had received enough doping information but they perceived that sports authorities should do more in educating athletes via sports website by providing regular updated list of acceptable supplements and medicines.

With the foregoing, it is necessary to address the reasons that may lead a talented athlete to resort to doping and how athletes' awareness, perception and attitude towards doping can be influenced so as to aspire for drug free competitions. Astrand and Rodhal (2003) point out that athletes use PES to ensure better performance, for economic gain and due to lack of understanding of the implications of doping. However studies have indicated that despite doping awareness, some athletes are not fully prepared to avoid accidental and deliberate doping behavior. (Lubna et al., 2008; Nowesielski & Swistkowska, 2007)

Literature indicates that Kenyan athletes have occasionally failed dope tests and have been banned from international sports competitions. The anti-doping taskforce (Republic of Kenya, 2014) has documented thirty five athletes who have tested positive for banned substances listed in the doping code. For instance, in 2004 Athens Olympic Games, a Kenyan boxer David Munyasia tested positive for cathine, a chemical substance found in khat(*miraa*). He confessed lack of knowledge and awareness about *miraa's* performance-enhancing effects. Elizabeth Muthoka tested positive for nandrolone during the 2008, Beijing Olympic trials (Republic of Kenya). She was supposedly treating a condition of low hemoglobin though she had not acquired Therapeutic Use Exemption (TUE) as required by WADA (Republic of Kenya). In 1993, John Ngugi, a five-time world cross-country champion was suspended from international competitions for four years after refusing an out-of-

competition dope test. His suspension was later reduced to two years after it was judged he was of little education and that the Kenya Amateur Athletics Association (currently referred to as Athletics Kenya) had not educated athletes on the issue of out-of-competition testing (Republic of Kenya,2014).

Bonney, Ireland, Miller et al., (2001) explains that since development of values, character and ethical decision-making skills are the primary purpose of sports programmes, there is no acceptable means to better performance apart from hard work and dedication. Bucher & Wuest (1999) also suggest that sports professionals such as graduates from teacher training colleges employed to teach in schools have a duty to promote programs that develop commendable values such as co-operation, self-discipline, hard work, fair play, emotional control and teamwork, among others. Teachers should take advantage of teachable moments such as Physical Education lessons and sports training to promote desirable sporting behavior, including abstinence from doping (Ama, Betnga, Moor et al., 2003).

1.2 Statement of the Problem

Kenya being a signatory to Africa Zone V Regional Anti-doping Organization (RADO) is expected to implement RADO's stipulations, that the national sports federations of respective member countries should educate athletes on doping issues (RADO, 2007). Further the Kenya's anti-doping task force has documented thirty five sportspersons who have tested positive on banned substances in the WADA code. The anti-doping report indicates that none of sports bodies in Kenya, including KTCSA have instituted a comprehensive anti- doping program to educate and test athletes. Lack of knowledge and awareness is blamed for Kenyan athletes innocently getting treated for normal ailments and failure to report to the attending physician that they

are athletes. Athletes are reported to have failed to report to relevant sports federations about the drugs they are prescribed for yet such drugs could contain some banned chemicals. A case in point is Lydia Cheromei who tested positive for a fertility drug she was using to treat a condition yet she had not acquired Therapeutic Use Exemption as stipulated by WADA. Equally, the National Agency for the Campaign against Alcohol and Drugs Abuse (NACADA) (2012) reports rising cases of various drugs/substances use among the youth between 15-24 years old. NACADA (2006) emphasizes the need for the teachers to educate students on the dangerous effects of drugs to their health. Although most of the abused drugs are recreational such as khat (*miraa*), alcohol, tobacco and *bhang*, some contain chemicals banned by the World Anti-Doping Code (WADC).

To protect Kenyan athletes from breaching the WADA code knowingly or unknowingly it is imperative to educate them on doping matters. One aspect of doping prevention is the assessment of athletes' awareness, perception and attitude towards doping so as to influence an individuals' orientation to PES in sports. An athlete who is aware of the negative effects of drugs is likely to have his/her perception and attitude towards PES changed for the better. College athletes upon becoming teachers would be in a better position to influence students positively on doping and use of PES in sports. While the aforementioned indicate that doping is a problem amongst Kenyan athletes, there is paucity of data on college athletes. This study therefore sought to determine Kenya college athletes' awareness, perception and attitude to doping in relation to their gender, competition experience and type of sport discipline they participated.

1.3 Purpose of the Study

The purpose of this study was to assess awareness, perception and attitude to doping and use of PES amongst college athletes participating in 2012 national ballgames and track and field athletics competitions.

1.4 Objectives of the Study

The objectives of the study were to:

- Determine the demographic profiles of athletes in Kenya Teachers Training Colleges
- Establish teacher trainees' previous participation in sports competition at primary and secondary schools.
- Determine the relationship between competition experience and athletes' awareness, perception and attitude to doping and PES use.
- Determine the relationship between gender and athletes' awareness, perception and attitude to doping and PES use.
- Find out if there were any significant differences in awareness, perception, and attitude to doping and PES use amongst athletes participating in different sports disciplines (ballgames, track and field athletics).

1.5 Hypotheses

The following null hypotheses were tested:

Ho₁. Extent of awareness of doping and PES by athletes in Kenya Teacher Training Colleges would not significantly differ in relation to their, Gender, Competition experience and Type of sport

Ho₂. There would be no significant association of college athletes perception of doping on the basis of their, Gender, Competition experience and Type of sport

Ho₃. Attitudes to doping and PES by Kenya teacher training colleges athletes would not significantly differ in relation to their, Gender, Competition experience and Type of sport

1.6 Significance of the Study

The study avails valuable data on the status of doping amongst athletes enrolled in teacher training colleges in Kenya. This data can inform stakeholders on the need of raising awareness on doping regulations to athletes participating in sport competitions at local, regional and international levels. The findings will assist competitors in making informed choices and decisions regarding use of banned substances. Physical education tutors may use findings of this study to relook the teaching of doping content in teachers training Physical education syllabus. The findings may be useful to institute doping preventive measures by KTCSA as well as impress upon relevant sports institutions such as Athletics Kenya, NOCK and, specific national sports associations/federations on the need to educate athletes regularly. Findings may be used to compare Kenya teachers colleges athletes' status on doping issues with other teacher trainees at local, regional and international levels. Parents/guardians of the teacher trainee athletes and the general public may use the findings to give informed counsel to athletes. The findings may also be useful for scholarly work and generate further research on other factors not covered in this study, and which may influence athletes' doping behavior.

1.7 Delimitations of the Study

The study focused on participants in Kenya's Teachers Colleges' national ballgames and track and field athletics competitions of 2012. A self-report questionnaire was used to gather the required data on their awareness, perceptions and attitudes relating to doping and use of performance-enhancing substances. The study only involved trainee teachers pursuing certificate and diploma courses in teacher education yet teacher trainees at university level are employed to teach at secondary level, probably as physical education teachers or sports coaches hence their awareness, perception and attitude to PES may influence athletes in primary and secondary schools in the way they view doping in sport.

1.8 Limitations of the Study

Doping is a sensitive issue, and athletes sometimes may not be candid enough about what they do and feel and/or may give what they perceive to be acceptable responses on doping and performance-enhancing substance. However, the researcher impressed upon the athletes on the importance of their participation in the study and the need for them to provide honest responses. Since ballgames athletes were competing in more than one match per day and those in track and field events may have competed in more than one race/ event, (it is common place for an athlete to compete in more than two races) they may have been tired by the time they filled the questionnaire and not given their total commitment to respond to the questions. Due to the sensitive nature of the study there could have been under-reporting and failure to answer some questions.

1.9 Assumption of the Study

It was assumed that participants gave honest responses and that Kenya Teachers Colleges athletes' awareness, perception and attitude had influence on doping and PES use in sports. It was hoped that even though athletes were indifferent years of study they were able to interpret the questionnaire correctly. The study did not take into account respondents' background such as rural or urban influence which could have had a bearing on their understanding of PES issues in sports which in turn may have influenced their responses to the questionnaire.

1.10 Theoretical Framework

There is no theory specifically developed for application in exercise and sport hence researchers have adapted the existing theories models to predict behavior in sport. For example Theory of Planned Behavior (TPB) model by Ajzen (1991) has often been relied on to assess athletes' attitude to doping. The TPB specifies the nature of relationships between beliefs and attitudes. The theory impresses that attitude towards behaviors are determined by the belief that certain behavior such as PES use would produce certain outcome. The TPB is reported to be a very powerful and predictive model for explaining human behavior and predicts deliberate behavior. Use of PES can be deliberate and planned hence TPB applicability in determining college athletes' attitudes to banned substances use.

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).

Another theory that has been applied to assess athletes' behavior in sports is Drugs Compliance in Sports Model (DCSM) by Donovan, Egger, Kapernick and Medoza, (2002) has factored in consequences of doping such as health and guilt concerns, which may deter an athlete from doping. The three models have explained the reasons why some athletes may dope while others may restrain.

This study adapted ideas from the DSDM by Strelan & Boeckman, (2003) DSCM by Donovan et al, (2002), and TPB by Ajzen,(1991) to investigate the extent of awareness, perception and attitude to doping among Kenya teachers colleges athletes. This is because the Theory of planned behavior predicts deliberate behavior and doping can be deliberate and planned by an athlete or team managers, coaches and trainers. The DSCM and DSDM factors in the costs and benefits that an athlete may be willing to take after deliberately planning to use PES in sports competition. Figure 1 shows the interrelations between the factors that come into play before an athlete decides to use PES or to refrain from the act.

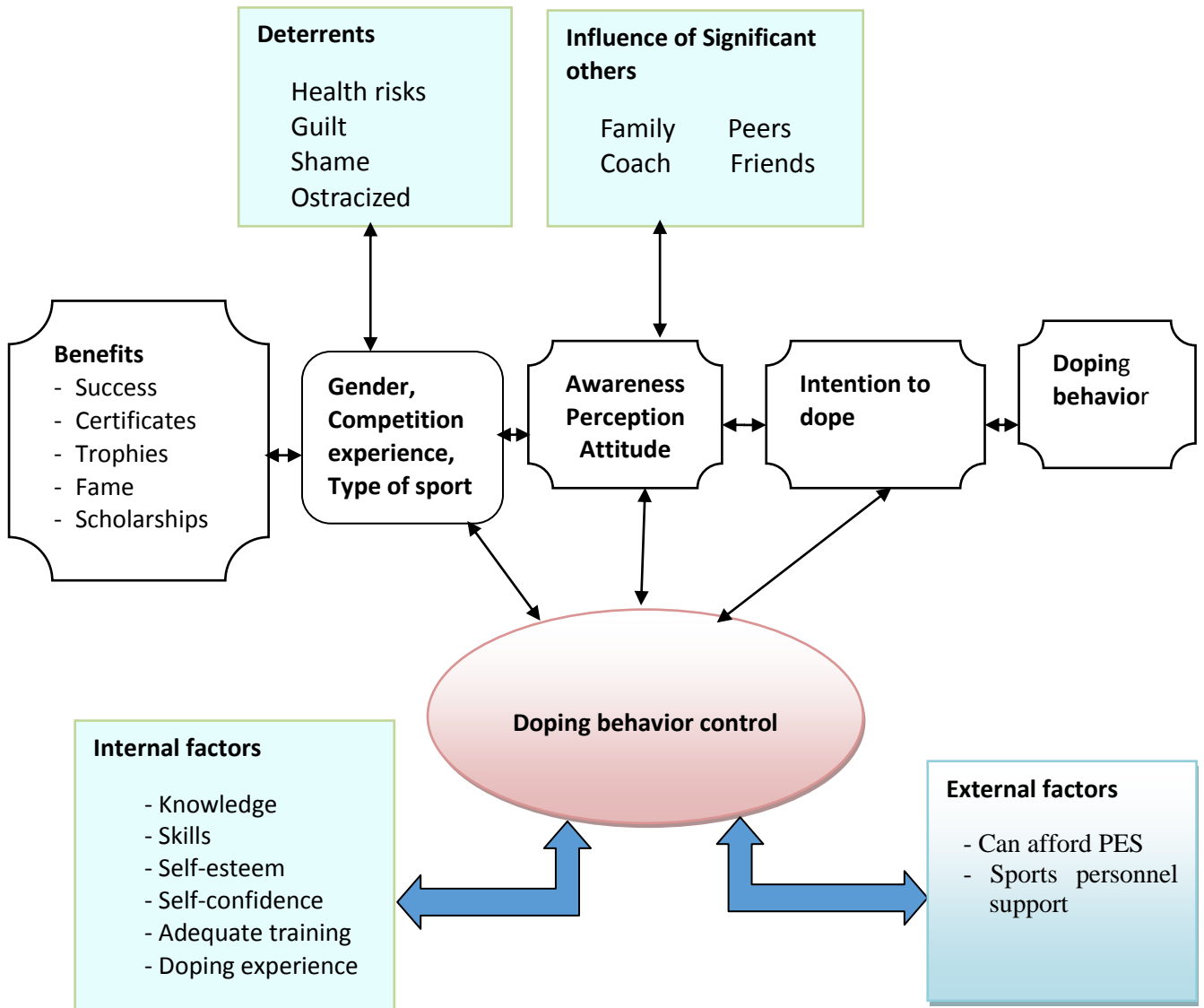


Figure 1.1 Drugs/Substance use in Sports Model: Adapted From TPB by Ajzen (1991), DCSM by Donovan et al., (2002), and DSDM by Strelan and Boeckman (2003).

As shown in figure 1.1, an athlete will weigh the deterrents and benefits first, reflect on his/her ability to engage in the behavior (internal and external factors) and consider the influence of significant others before decisions to use PES. An athlete who has adequately trained and is highly skilled is likely to be confident and has positive self-esteem hence may not lean towards doping. On the other hand an athlete who may have doping experience and has not been detected, can access and afford PES may be drawn to dope. This is more likely if the coach and athlete personnel are in the

support of the vice. If the benefits, that is, winning or desire for trophies outweigh the deterrents and the influence of the significant others such as the coach, friends and family support the intentions, then the athlete will engage in the vice. In all, the deterrents, the benefits, the significant others and the doping behavior control factors will impact on athletes' awareness, perception and attitude to doping thereby determining the intention and finally the decision to use PES or to refrain.

CHAPTER TWO: REVIEW OF LITERATURE

2.1 Introduction

This chapter presents the related literature on various issues on doping. These include basis for doping, substance abuse among youth in sports, cases of Kenyan athletes implicated in doping and effects of using PES. Other areas covered include, performance –enhancing substance use among college athletes, cases of Kenyans implicated with doping, effects of drugs use in sports to an athlete, physiological effects, economic effects, ethical and social implications, Psychological effects, PES use by gender, PES use by type of sport, athletes competition experience and substance use in sports, awareness, perception to doping behavior, attitude to doping, and the summary of reviewed literature.

2.2 Basis for Doping

Varying reasons have been fronted as the driving force that causes athletes to use PES in sports. When some athletes feel inadequately prepared for a competition they may seek for a quick fix and resort to doping (Insel & Roth, 2002). Corbin et al., (2004) observe that some athletes use drugs to take their performance beyond that which their bodies can optimally attain when properly trained. To attain optimal performance and avoid temptation to dope, Powers and Howley (2001) advise that training should start early in a competition season. Anspaugh, Hamrick and Rosato (1991) have noted that to cope with stress from the high - pressure demands of a competition, a competitor may resort to the use of illegal substances. There is therefore, need for the trainers and coaches to enlighten the athlete into seeing the event as a responsibility and situations as challenges rather than stressors. Insel and

Roth (2002) suggest that athletes should equally be enlightened on the appropriate methods of coping with stress. Bucher and Wuest (1999) have identified the huge salaries paid to athletes by event organizers and sports club owners as a temptation that leads athletes into doping habit as a short-cut to win the huge prices.

Equally, Ehrnborg and Rosen (2009) express the fact that athletes dope 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 resort to doping. Some athletes are also reported to use PES if it guarantees them finances to pursue their college studies (Albrecht, Anderson and Mckeag, (1992). Laure, Bansinger and Lercerf (2002) expound that substance abuse in sports have increased as the pharmacy drug industry has grown. They state that this has made the drugs readily available where an individual can even purchase online. Laure et al., (2003) further 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 al., (2003) also 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. But what was unsporting conduct is the revelation that professional team sports personnel were routinely supplying PES to athletes during training (Koch, 2002; Lubna et al., 2008).

As reported by Moran, Guerin, Kirby & Macintyre (2008) athletes are reported to be drawn to doping where the training environment encourages or even supplies the doping substance/drugs. They have noted that athletes confessed to have found it very

difficult to resist the temptation to dope when some of their training peers are using PES. Desire to dope also makes an individual susceptible to doping especially if confounded by personal and situational factors, Personal factors such as low self-esteem/confidence has 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.

2.3 Drugs and Substance use by Athletes in Sports

Koch (2002) has reported increased use of steroids among young athletes with 5 to 11 % of high school males admitting use of anabolic and androgenic steroids by the time they finished high school. These findings agree with observations by Insel and Roth (2002) that the younger a person is when he/she starts to use the drugs the more likely that person is to use illegal drugs and the more likely to become physically dependent on drugs.

A study on 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 findings indicate 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 knowingly used PES with the intention of improving performance. Furthermore, although androgenic substances could only be obtained through a doctor's prescription, 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 free drugs. The study recommended the Jordanian Ministry of Education and the Higher Council for Youth

to conduct a more comprehensive survey to measure the prevalence of anabolic-androgenic Steroid (AAS) abuse. However the study was confined only to the body builders and did not include participants in other sports.

Insel and Roth (2002) report that drug and substance abuse starts as early as 12 years of age. It is observed that young participants at this age graduate from drugs such as tobacco and alcohol to hard drugs such as cocaine or heroin. Insel and Roth (2002) further note that the younger a person is at starting to use the drugs, the more likely that person is to use illegal drugs and the higher the likelihood to become addicted. They emphasize that about a third of college students used non illegal drugs, tobacco and alcohol being the most abused by students who later graduate to using illegal drugs.

The situation is not very different in Kenya given the National Agency for the Campaign against Drug Abuse (NACADA 2012) report that drug abuse has risen rapidly. NACADA (2012) purports that the greatest victims are the youth who are deliberately and tactically recruited into drug culture through personal factors such as poverty and family dysfunction, uncontrolled media influences and social exposure. NACADA (2012) identifies ignorance/lack of awareness, denial and greed as the major contributors to the prevalence of substance abuse. NACADA (2006) observes that working closely with teachers by conducting nation-wide public awareness campaign aimed at empowering the youth and their custodians with information on the harmful effects of drugs and substances abuse to an individual, family and community would reduce the impact of abuse. Indeed, a campaign by NACADA aims at curbing drug abuse among the youth in learning institutions not only to make them role models but also to adequately respond to challenges posed by drug abuse. The

campaign by NACADA (2012) revealed that drugs abuse is a real problem among the youth in Kenya and there is need for investigations to determine the causes of doping behavior and how to curb the problem. Some of the substances abused such as khat (*miraa*) contain chemicals elements that are among the list of the banned drugs by the WADA.

NACADA (2006) further notes that there are many laws such as Narcotics Drugs and Psychotropic Substances Control Act, Act no. 12 of 1994 which addresses the majority of harmful drugs such as bhang and opiates, Pharmacy and poisons act cap 224 Laws of Kenya, Penal Code cap 63 law of Kenya. However, their poor enforcement has seen unregistered chemists and pharmacies continue to operate without registration, thus resulting to increase in persons accessing and abusing drugs. Medical practitioners are reported to assist athletes' access to drugs for purpose of enhancing performance, either by explaining how to use them or by prescribing them (Laure, Binsinger, and Lecerf, 2002). NACADA (2006) expresses the need for the medical practitioners to use information on the effects of drugs/substance use to influence awareness, perception and attitude of those athletes who may seek their assistance.

An investigation of the attitudes of 856 Japanese physical education university students towards doping in sports by Masato, Yukitoshi and Tosihiko, (2013) indicated that they were not aware of the kind of drugs they were using. This was despite the fact that the students had attended lectures about illegal drugs an indication that they had not studied the doping control systems. Masato et al., (2013) recommended the need to prevent growth of the prevalence of illicit or performance enhancing drugs.

2.4 Performance-Enhancing Substance use Amongst College Athletes

Studies on college athletes show 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 programming mandatory testing. The study covered athletes in basketball, American football, baseball, track and field, and hockey. Out of 197 athletes who responded, 57% of them had used PES in college and 10% noted that PES use had enhanced sports performance. The study also revealed that male athletes were more likely than female athletes to know teammates using illegal substances. However the study did not compare attitude to PES by gender or by competition experience.

An evaluation by Peters (2005) of college athletes' beliefs and social norms about ephedra onset and perceived addiction, focused on feelings towards users, how long the drug has been used, indications of addiction, health risks involved and what prevents athletes from stopping the use of ephedra. Male athletes noted reasons for the use was to enhance performance and due to the coach and peers encouragement. Weight loss and need to increase energy levels were the reasons cited by the female athletes. Athletes also reported that they would use the drug if winning the sport was guaranteed. Routine use of the drug was due to addiction and health risks resulting from use of ephedra included 'shaking', and weird behavior. Female athletes indicated that the reasons they could not manage to stop PES use was due to appearance concerns. Both male and female athletes noted that performance enhancing and lack of education were the main barriers in quitting the habit.

Using an anonymous self-report questionnaire, Buckman, Yusko, Helene, Robert, & Pandina (2009) investigated 234 male college student athletes aged 18-26 years on whether they were involved in high-risk patterns of alcohol and other drugs use and demonstrate risk behaviors associated with problematic substance use. Buckman et al., (2009) reported PES users (those who had reported past year use of broad array of PES) displayed more problematic alcohol-use behavior and drugs-use-related problems. They concluded that the male athletes who reported PES use also participated in substance use behaviors that can have profound negative effects on sports performance. Athletes who used alcohol in sensational seeking were reported to also use steroids. The athletes who were using PES were reported to have limited awareness of drugs they used. The value placed on considerable evidence of serious physical and mental consequences of use could compound the problem leading to escalation in the prevalence of PES use among athletes. The study recommended more research on the use of 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. 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 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 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 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.

2.5 Cases of Kenyan Athletes Implicated with Doping

Although Kenyan athletes have tried staying 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 (John Ngugi Foundation, 2014). Anti-doping taskforce (Republic of Kenya, 2014) has 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 who 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 WADC. In 2005, a professional footballer on assignment with a South Africa 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 400 meters sprinter who tested positive for nandrolone (a banned substance) in July 2008 during the Beijing Olympic trials. The athlete claimed she was treating 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 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 subtamol since there is that provision by the WADC. These cases of doping indicate ignorance as the main cause of athletes, 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, 2014; RADO, 2007).

2.6 Effects of Drugs Use in Sport to an Athlete

The broad objectives of the World Anti-Doping Agency is to protect the health of the athlete, ensure fairness in sports competition by ensuring level playing ground and safeguard the image of sport (WADA, 2014). However, despite the existing doping regulations, cheating is still prevalent and increased fan 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 oblivion of effects of banned drugs on the athletes health and likely hood of getting banned from participation in competitions. In response to this declining sports ethics, sports governing bodies have sought to rectify the problem by imposing strict regulations (WADA, 2014).

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 (2014) 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 include 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.

2.7 Physiological Effects of Doping

Although substance use in sports may enhance performance, they can also lead to short term and long term effects. However effects vary with different drugs/substances abused. NACADA (2006) outlined khat (*miraa*) use as a cause of spermatorhea in men, a condition where the user experiences uncontrolled sperm production and release causing the affected individual to use diapers to deal with the situation. Khat (*Miraa*) may also lead to impotence since chemical substances found in Khat (*miraa*) affects the quality of the sperm. Other effects of khat (*miraa*) include gum disease and addiction.

Creatine, which is widely used by athletes in anaerobic activities, is said to lead to muscle cramping, intestinal discomfort, dyspnea, vomiting, diarrhea, arrhythmias, anxiety, and even seizures. Adrostenedione use can result in premature puberty or induce premature closure of long bones growth plates. Most of the drugs used to stimulate the central nervous system are associated with hypertension, angina, cerebral hemorrhage, dependence and even death (Lubna et al., 2008). Hartgens and Kuipers (2004) further observe that, though under medical prescription steroids are useful in treatment of muscle diseases, breast cancer, severe burns and kidney disease among others, they can be addictive and produce more than 70 other side effects (Corbin et al, 2004). While some side effects of anabolic adrenergic steroid are quite visible and apparent, a majority of effects on cardiovascular system often go unnoticed until a serious medical complications arises (Warpeha, 2006). Warpeha (2006) further reports that left ventricular hypertrophy is said to be a common finding in heavy resistance trained athletes. Long term use , overuse and abuse of anabolic adrenergic steroid is cited by Brooks, Fahey and Baldwin (2005) to be a major cause

of heart damage. Other side effects as reported by Warpeha (2006) include diastolic dysfunction, arrhythmias, myocardial infarction, stroke and sudden cardiac death. A report on two separate case studies by Alarah, Chamoun, Dahdalel, et al. (2005) indicates that young healthy male athletes who admitted to have used high doses of AAS had suffered subdural hematoma (bleeding in/on the brain) which is a rare occurrence in healthy young individuals. Liver toxicity is also a common finding in AAS users as exhibited by increased liver enzymes and jaundice as a side effect (Trenton & Currier, 2005).

David and David (2005) have noted that alcohol leads to dehydration, hangover, insomnia, fights and weight gain all of which affect the athlete negatively. Insel and Roth (2002) have observed that during a hangover, heart rate and blood pressure increase making some individuals more vulnerable to heart attack. Specifically, alcohol affects aerobic and psychomotor skills due to its slow/ fixed rate of metabolic and toxic interference with energy and carbohydrate metabolism. Alcohol is said to cross the brain barrier affecting brain centers for balance, coordination, judgment and reasoning, emotional control, level of alertness and socialization, sensory motor dysfunction and mood instability. None of these side effects are beneficial to athletics performance. David and David (2005) have reported that rate of alcohol consumption by athletes is higher than that of general public with rates for men at 75-95% and for women at 71-93%. The same report indicates that consumption is more by soccer players, swimmers, baseball/softball than in basketball, volleyball, and track and field athletics. Their study further reports that alcohol consumed 24 hours before athletics activity significantly reduces aerobic performance by 11.4%. Furthermore, rate of consumption of alcohol a day before training and competition was too high at 18-84% in basketball, soccer, rugby and football.

Caffeine is reported to cause insomnia when used in high doses greater than 500mg per day and can lead to dehydration both of which add no value to athletics performance. However caffeine is known to increase the rate of fat metabolism and sparing glycogen depletion both of which gives the consumer an added advantage in sports performance. It is considered as a banned substance by WADA when blood level goes beyond 12 mg/ml accepted level (Graham, 2001). Caffeine produces alertness and a sense of well-being, decreases feelings of fatigue and may enable a person to keep up with physically exhausting task longer (Insel & Roth, 2002). Marijuana is a psychoactive substance in which even a low dose causes euphoria, a heightening of subjective sensory experiences, a slowing of the perception of passing time and a relaxed attitude. With time the effects become stronger and may lead to impaired memory function, disturbed thought pattern, and lapses of attention. These effects do not positively affect sports performance while long term use may cause respiratory damage including chronic bronchial irritation and precancerous changes in the lungs (Insel & Roth, 2002).

2.8 Economic Effects of Doping

The fight against doping is an expensive venture and has economic implications to an individual and the nation. A long suspension or life ban from competition may bring a sports career to an end thus loss of livelihood to an upcoming athlete or a professional athlete. However the critics of anti-doping argue that elite athletes comprise a small percentage of the global population yet so much of resources go into testing of these athletes. Kayser, Mauron and Miah (2007) for example report the following regarding the enormous resources spent on anti-doping measures; that, the WADA budget amounted to 21 billion US dollars in 2004, the Olympic movement and governments

of the world are the ones that fund WADA, the USA anti doping agency spent 10million dollars, international cycling union spent 1.4 million Swiss francs directly on doping controls and testing in 2003. They further argue that the overall world budget for anti-doping work is going to increase as the number of athletes entering elite sports rises and as the complexity of the tests analysis increases.

Kayser et. al (2007) is of the view that while the rich countries may be in a position to pay for the anti doping tests, the developing countries cannot. They recommend that such enormous funds dedicated to the fight against the vice, should be directed to developing sports infrastructure especially in developing countries, Furthermore, they observe that although the IOC and other international sports federations fund the developing countries, much of the budget is accrued from the specific country governments. The critics argue that the money spent on drugs testing should be used to develop sport infrastructure to raise the standards of skill in specific sport by offering the best facilities and employing skilled personnel such as coaches and trainers. This would ensure that more people get a chance to enter sport of their choice.

Haisma (2006) warns that as the gene doping has continued to receive considerable attention in the recent years, anti doping critiques point that this might move the war on doping to a stage of technical sophistication that might make it financially difficult to sustain. Furthermore, while an athlete may be tempted to dope to benefit from huge prizes and improve economically, the opposite is often the case when the athlete gets banned for testing positive for banned substances. The suspension period may just be the time the athlete is at his/her natural peak performance such that after the suspension period one may not be able to participate competitively. This means loss

of income to a professional sportsman and probably the end of a career (Kayser et al, 2007)

2.9 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. They point that particular doping practice has not been approved for use with health athletes and therefore have not benefited from extensive clinical trials necessary before a therapeutic substance can be used. 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 includes the significant others such as family and coaches was portrayed to exert influence on athletes decisions to doping

2.10 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 includes hostility and aggression, violent behavior, sexual crimes, inability to accept defeat, apathy, depression and wide mood swings among others (Gaffney, 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 recreation purpose. 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.

2.11 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) has reported male athletes having 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 was seen to affect their attitude to PES. Petroczi (2007) notes 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 have a tendency 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 sensation seeking and greater 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 athletic 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 et al., (2009) male athlete using PES had an inclination 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.

Some drugs used to enhance performance also put the consumer at a health risk. For example David & David (2005) have reported that male athletes who have demonstrated high doses of AAS have suffered subdural hematoma not likely to occur to a healthy young person. David & David (2005) study further reports high rate of consumption of alcohol by male athletes at 75-95 % compared to females at 71-93 %. High rate of alcohol consumption is likely to suppress endurance performance significantly when consumed before athletics activity (Kirby et al. 2008).

Even as uses of performance enhancers continue 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 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 athlete 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.

2.12 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.

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 tests 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. Among track and field athletes, anabolic steroids and Erythropoietin are also prevalent.

2.13 Athletes Competition Experience and Substance use in Sports

Consequences of doping being outlined in the WADA code, one would expect athletes especially those who aspire to enter competitions and particularly athletes who have competed for a longer time to be better informed on issues to do with doping as well as to desire to compete drug free. However research findings 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. But 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 account values that a doped athlete was likely to lose if detected, Mroczkowaska, (2010) reports that no differences towards doping consequences between athletes who had competed for 4-8years 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 so as not to lose them. However athletes with less competition experience showed less value for health and respect and displayed high value for bonuses. Mroczkowaska, (2010) explained 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) have also reported prevalence of doping substances among male athletes aged 20- 25years with the ratio of users increasing with the level of competitions especially as athletes graduate to high levels of sports competitions

An evaluation of college athletes' use of banned substances in sports by NCAA, (2006) found out 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 enhancers. Reporting on the reasons 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.

2.14 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 programmes to educate and warn students and mentors about the negative side effects of ASS on the health of the user as the drugs were becoming a public health concern.

Lack of awareness of anti-doping is equally presented in a study by Levent et al. (2005) where 54 % of respondents acknowledged they were not fully aware 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 who 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 considering use of PES.

2.15 Perception of Doping Behavior

Bucher and Wuest (1999) 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. 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 respondent in the study also 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 hence 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 and Russell (1997) of Australian elite athletes presents 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. A study by

Bloodworth and McNamee (2009) on attitude towards doping among 40 male and female athletes in United Kingdom (UK) reports 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) notes that athletes' perception of PES can also be influenced by athletes' personal trainer opinion of doping and that of the role models. Another study by Petroczi, Aidman and Nepusz (2008) of 111 college students' perception to doping established that 66% of athletes were of the opinion that doping is useful for ones athletics performance.

An investigation of 50 university students perception of doping by Kumar and 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 were in agreement that a complete ban of doping in sports is necessary. Kumar and Joyti (2013) recommended that WADA and government bodies should step up strict measures to ban doping and that every sports 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 with athletes

pursuing participation in individual sport. The study established that team environment enjoyed by participants gives a sense of belonging which tends 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 pressured 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. 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 players made them very 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 uses 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.

2.16 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) conducted a self-report study on use of doping substances and supplements among 1232 Italian students. The findings showed 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 agrees with those of Feinberg (2009) that athletes who cheat would be more lenient in attitude towards other athletes who cheat thereby recommending that cheaters should be judged by their intention and not by the consequences of their behavior. The WADA (2014) 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 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. Whitaker 2012 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 hence the study recommended prevention programmes to correct athletes' negative attitudes targeting mostly male athletes and those competing at national levels.

2.17 Summary of the Literature Review

Many reasons have been advanced explaining why athletes use performance-enhancing substances. These include desire to perform at a higher level, not having trained adequately, to cope with stress associated with competition, desire for medals, and monetary gains. Some athletes also dope because of lack of awareness on implications of doping (Corbin et al., 2004; Anspaugh, Hamrick & Rosato, 1991). Doping is also encouraged by readily available drugs from pharmacies where doctors prescribe and sell to athletes. Training environment leads to use of PES where peer pressure creates temptation that athletes find difficult to resist. Personal factors such as low self-esteem/confidence are equally blamed for doping vice (Lubna et al., 2008 Moran & Guerin, 2008; Laure & Binsinger, 2007; Jendrek, 1992).

Doping starts at an early age of 12-15 years with recreational drugs/substances such as tobacco, alcohol, the user graduating later to hard drugs such as cocaine and

steroids (Insel & Roth, 2002; NACADA, 2012). Use of drugs amongst the youth is reported to be on the increase and Kenya too is faced by the vice. NACADA (2012) has identified personal factors, ignorance, uncontrolled media, denial and greed as major contributors to the increase in use of banned drugs. NACADA recommends education on drugs use corroborating with teachers countrywide. Some Kenyan athletes have been suspended from sports competition for using banned substances (Republic of Kenya 2014). Like many other athletes elsewhere Masato et al., (2013) Kenyan athletes implicated with doping have lacked awareness on PES use in sports

Effects of doping are both short-term and long-term and include social and ethical/moral as well as health/physiological, and psychological (Warpeha, 2006; Brooks, Fahey & Baldwin, 2005; Alaranta et al., 2006; Insel & Roth 2002). Although some athletes are aware of the serious implications of doping, they still use PES. Most studies on doping tend to focus on ball games players leaving out track and field athletes (Ama et al., 2002; Lubna *et al.*, 2008). Doping studies seem to dwell more on the male athletes (Petroczi, 2007). Researchers have also taken interest in finding out the extent of abuse of specific type of drugs Koch & Jason, (2002); Hartgens & Kuipers, (2004) but not the reasons why athletes would want to dope.

Studies show that athletes lack doping awareness and health risks involved (Dimeo et al., 2013; Alaranta et al., 2006; Ama et al., 2003; Koch, 2002). Perception on doping is influenced by how winning in sports is viewed. Male athletes are likely to dope compared to female. Some athletes view doping as unethical while others fail to dope because they fear being caught and possible sanctions (Petroczi, 2007; Peretti-Watel, 2004). Some athletes perceive that doping happens elsewhere but not amongst them while others believe their teammates are using PES (Insel & Roth, 2002; Bloodworth

& Mcnamee, 2009; Mazazov et al., 2008). Team players lack awareness more than track and field athletes. Team environment is less stressful than in individual sports hence athletes are less likely to dope. Participants with long competition experience have more awareness, wrong perception and positive attitudes to PES (Lucidi et al., 2008; Kirby et al., 2008).

This study intends to incorporate college male and female athletes in ballgames, in track and field events as well as their experience in competition, with a view to establish their awareness, perception, and attitude to performance-enhancing drugs/substances.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

This study adopted the cross-sectional survey design. This design is suitable when gathering information about present practices, opinions and attitudes. A phenomenon is evaluated spatially at a point in time involving a cross-section of the population (Kamlesh, 2006). The study set out to establish whether athletes' awareness, perception, and attitudes to doping differed across participants' gender, competition experience, and type of sport.

3.2 Research Variables

In this study, the independent variables included gender, type of sport and experience in competition. The dependent variables were awareness, perception and attitude to doping and use of performance-enhancing substance. The focus of the study was to determine whether athletes' awareness, perception and attitude to doping with regard to gender, experience in competition, and type of sport.

3.3 Location of the study

The Kenya Teachers Colleges Sports Association (KTCSA) games are organized in seven zones namely Nyanza, Western, Rift valley, Central, Nairobi, Eastern and Coast. This study was therefore carried in three of these zones including Coast, Central and Rift Valley.

3.4 Target Population

The target population included all male and female teacher trainee athletes. They were all above 18 years. This ensured they made informed decision to participate in the study voluntarily. The participants were either in first, second or third year of teacher education course of study. Being potential primary and secondary school teachers and sports coaches, and by extensions stakeholders in sports, athletes understood the need to participate in the study regarding PES in sports. Their level of education was equally favorable to the understanding of the questionnaire items. Since physical education is a compulsory subject of study in teacher education course, doping content is taught to college students, athletes were expected to understand and appreciate their participation in the study. Only athletes who represented their zones at national competition were included in the study. Each zone consists of all number teacher training colleges in that zone that are registered under the Kenya Teachers Colleges Sports Association. Each of the seven competition zones presents equal number of teams/participants to the national competitions in six ballgame disciplines(160 players) and track and field athletics(72 athletes)drawn from 24 disciplines in track (15) and field (9) events, therefore the target population was 1624.

3.5 Sample and Sampling Procedure

Simple random sampling technique was used to select athletes in the three competition zones which involved writing the names of the seven competing zones on pieces of papers, mixing them in a container then three of them were picked at random. This procedure ensured each of the total sampling unit of population had an equal and known probability of being selected (Nachmias & Nachmias, 1996). All athletes from the three competing zones namely, Coast, Rift valley and Central

formed the sample of the study. The numbers of male and female players in the six ballgame disciplines per zone were as follows; soccer (36), hockey (32), volleyball (24), basketball (20), handball (24) and netball (24), hence the total was 160 (80 male and 80 female). On the other hand, each zone presented 72 track and field athletes (36 male and 36 female). These were drawn from 24 disciplines in track (15) and field (9) events. With each zone constituting 160 ball games players and 72 track and field athletes, the sample size from the three randomly selected zones was 480 ball games players and 216 track and field athletes. The total sample was therefore 696 participants. This accounted for 42.9 % of the total target population. It has been advised that in survey studies, the sample has to be sufficiently large and not less than 20 percent in a large population (Kamlesh, 2006) as was the case in this study. However at the end of data collection only 622 athletes completed the questionnaire which was 89.4% rate of return.

3.6 Research Instruments

The instrument for data collection was a self-report questionnaire comprising four sections namely, bio data, awareness, perception, and attitude to doping and PES use in sports (Appendix E). Section 'A' on biodata comprised 6 items and was intended to capture the demographic characteristics of the participants. Section 'B' on awareness had 11 items and hoped to measure athletes' information and understanding of doping issues while section's' on perception with 10 items purposed to assess opinion and understanding of athletes on the use and effects of PES in sports. Section D on attitude comprising of 17 items was used to evaluate extent to which college athletes agreed or disagreed with various beliefs and opinions about use of performance enhancers. Section A, B,C were constructed by the researcher using information

from the reviewed literature while the items on the attitude section was adapted and modified from an Performance Enhancement Attitude Scale (PEAS), a test tool developed by Petroczi and Aidman (2009). The tool comprises 17-standard attitude statements measured on a seven point Likert-type scale ranging from 'strongly disagree (1), to strongly agree (7). For this study the scale was adjusted to five points to make it clear for the respondents. A higher score on the attitude scale is considered to reflect positive attitude to doping (Petroczi & Aidman 2009).

3.7 Pre-Testing of Research Instrument

Pre-testing of the instrument was done to ascertain its validity and reliability as well as train the research assistants on administering the questionnaire to the targeted athletes. A pretest sample between 1 % and 10 % of the total sample is considered suitable and the larger the sample the smaller the percentage should be (Mugenda & Mugenda, 2003). Pre-testing of the instrument was done using 74 subjects drawn from Nairobi zone who were subsequently not included in the final study. This was equivalent to 10% of the total study sample of 696. Pre-testing assisted in establishing whether the respondents would interpret the questionnaire items the same way and ensure that all the appropriate variables of the study were represented. The researcher, together with a panel of lecturers from the Department of Recreation Management and Exercise Science of the Kenyatta University assessed the doping concepts that the questionnaire intended to measure to establish that the items accurately represented the concepts. Validation equally helped in detecting any flaws in language, directions and item difficulty and how much time it would take to answer the questionnaire. The results of the pre-test were used to amend the questionnaire by adding and discarding

the items not found appropriate thereby ensuring the suitability the questionnaire in measuring the dependent variables.

3.8 Reliability of the Instrument

To establish whether the research instrument would measure the research constructs consistently, reliability was estimated using Cronbach's alpha reliability method. This involved correlating each item score with the total questionnaire score. As Neil (2004) has noted Cronbach's alpha reliability is an important method to estimate the reliability of an instrument in a study like this one in order establish whether the items on the self-report questionnaire were consistent with one another as they represented same dimension of the area of interest that is awareness, perception and attitude to doping. The reliability test was carried out using 74 Nairobi KTCSA competition zone athletes. The test yielded a score of 0.83 for the performance enhancement attitude scale. This is comparable to previous reliability score of 0.82 achieved using the same tool on a study of 73 USA college footballers and a score of 0.85 on track athletes. The awareness questionnaire returned a reliability of 0.70 and perception section had 0.72. This indicated a reliability index for each section of the questionnaire thus making it unacceptable tool for use in carrying out this study.

3.9 Data Collection Procedures

Distribution of the research instrument to the athletes was carried out by the researcher with the assistance of the six research assistants. The researcher and assistants first would explain all the study-objectives, benefits and, ethical considerations before athletes could be handed over a consent form (Appendix C). After reading and signing consent form a participant could be issued with a self-report

questionnaire and a pencil. This was done in the sports field about 30 minutes before the commencement of an event or game. Each participant took about 15 minutes to complete the questionnaire. The researcher did the overall supervision of the data collection. Completed questionnaires were collected immediately after a participant had finished.

3.10 Data Analysis and Presentation

All data was entered and coded using SPSS version 20 for organization and analysis. Descriptive statistics including percentages, frequencies, means and standard deviations were used to organize and summarize the data. Chi-square test was used to determine whether athletes' awareness of doping (H_{01} , a, b, c,) and perception of doping (H_{02} , a, b, c,) had significant association in relation to gender, competition experience, and type of sport. To test for significant differences in attitude to doping by gender (H_{03} , a) an independent t-test was computed. Similarly, One-way Analysis of Variance (ANOVA) was applied to determine whether athletes' attitude to doping and PES differed in relation competition experience (H_{03} , b) and type of sport (H_{03} , c). The significance threshold was set at 0.05. Scheffe test was applied to establish the source of significant differences in attitude to doping amongst athletes participating in different sports disciplines. Results were presented in tables and charts.

3.11 Logistical and Ethical Considerations

After the researcher was granted permission to go ahead for data collection by graduate school of the Kenyatta University (Appendix A), a research permit was further obtained from the National Council of Science and Technology (NCST) (Appendix B). Respondents were informed that participation in the study was

voluntary with no monetary rewards and that an individual was allowed to withdraw from participating in the study without consequences (Appendix C). The nature and purpose of the research was fully disclosed to the subjects. Participants were equally assured that all information given would be treated with strict confidentiality. Furthermore the subjects were neither required to disclose their names nor were they assigned any identification numbers for any purpose during the entire period of the study.

CHAPTER FOUR: FINDINGS

4.1. Introduction

This study set out to assess awareness, perception and attitude to doping and performance-enhancing substance use among the Kenya teacher training colleges athletes participating in the national athletics and ballgames competitions. A self-report questionnaire was administered to all respondents during the competitions. The following research objectives were set out to guide the study:

The objectives of the study were to:

- Determine the demographic profiles of athletes in Kenya teachers training colleges
- Establish whether teacher trainee athletes participated in sports competition at primary and secondary schools.
- Determine the relationship between competition experience and athletes' awareness, perception and attitude to doping and PES use.
- Determine the relationship between gender and athletes' awareness, perception and attitude to doping and PES use.
- Find out if there were any significant differences in awareness, perception, and attitude to doping and PES use amongst athletes participating in different sports disciplines (ball games, track and field athletics).

To achieve the study objectives, the following null hypotheses were formulated and tested using chi-square, independent t-test and ANOVA. Scheffe post hoc test was computed where significant differences were realized after ANOVA.

H_{01} . Extent of awareness of doping and PES by athletes in teacher training colleges in Kenya would not significantly differ in relation to their; Gender, Length of experience, and Type of sport.

Ho₂. The perception of doping and PES by athletes in teacher training colleges would not significantly differ on the basis of their, Gender, Experience in competitions and type of sport

Ho₃. The attitude to doping and PES by Kenya teacher training colleges athletes would not significantly differ in relation to their, Gender, Experience in competition and Type of sport

4.2 Respondents' Profile

A total of 696 questionnaires were administered. Out of these 622 were completed and returned representing a return rate of 89.4%. Out of the total returned, 48.2% were females whereas 51.8% were males.

4.2.1 Distribution of Participants by Age

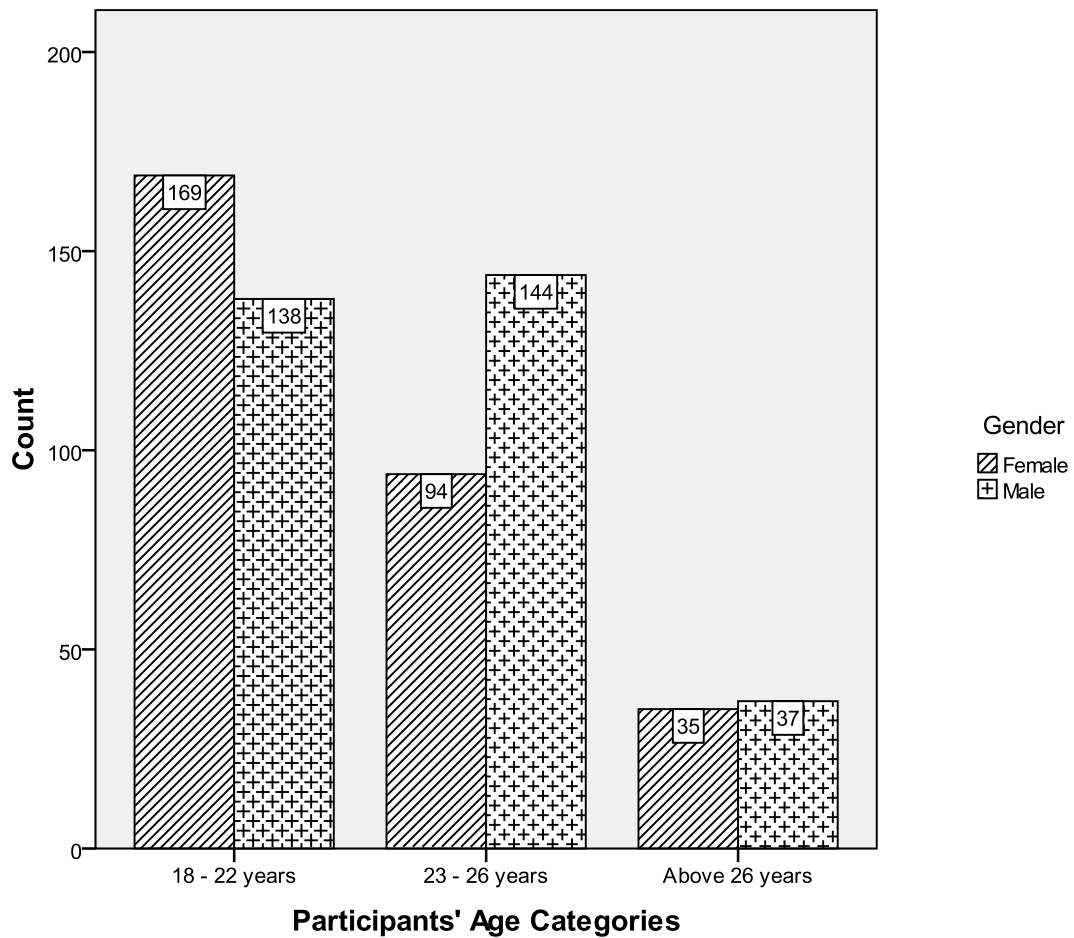


Figure 4.1: Distribution of respondents by age categories

Figure 4.1 shows that out of 622 participants, 618 of them indicated their age as follows: 307 (49.4%) athletes were aged between 18 to 22 years, 238 (38.3%) aged between 23-26 years, while 73 athletes (11.7%) were above 26 years.

4.2.2 Distribution of Participants by Type of College

Athletes participating in both ballgames and track and field events were drawn from public and private teacher training colleges. Out of 622 athletes, 560 (90%) were from public colleges while only 47(7.6%) from private teacher training colleges.

4.2.3 Distribution of Participants by Type of Sport

College athletes participated in ballgames and track and field athletics as indicated in table 4.1 below.

Table 4.1: Distribution of participants by type of sport

Type of sport	N	Percentage
Ballgame	410	67.3
Track athletics	135	22.2
Field athletics	64	10.5
Total	609	100%

As shown in Table 4.1 there were more participants in ballgames competition than in track and field events. Out of the total respondents, 410 (65.9%) participated in ballgames, 135 (21.7%) in track athletics and 64 (10.3%) took part in field athletics.

4.2.4 Distribution of Participants according to Participation in Ballgames

The distribution of players according to the ballgames they were participating during KTCSA national competition is presented in Table 4. 2.

Table 4.2: Distribution of participants by type of ballgames

Type of Ball Game	N	Percentage
Soccer	84	20.7
Hockey	76	19
Handball	63	15.5
Netball	63	15.5
Basketball	60	14.8
Volleyball	59	14.5
Total	405	100%

Table 4.2 indicates that soccer (84) and hockey (76) had the highest number of participants. These figures however represented both female and male teams i.e. two teams for each sport in the three competition zones.

4.2.5 Previous Participation in Primary and Secondary Schools National Competitions.

Participants were asked to indicate whether they had participated in national athletics and ballgames competitions while in primary and secondary schools levels of education. Their responses are shown in Table4. 3.

Table 4.3: Primary and Secondary Athletics and Ballgames

School level games	No. of Responses		Total
	Yes	No	
Primary ballgames	224 (38.2%)	362 (61.8%)	586(100%)
Primary athletics	95 (33.2%)	392 (66.8%)	587(100%)
Secondary athletics	369 (62.8%)	219 (37.2%)	588(100%)
Secondary ballgames	197 (33.6%)	389 (66.4%)	586(100%)

As shown in Table 4. 3, 362 (61.8%) college athletes had not participated in national ballgames when they were in primary school while 224 (38.2%) had participated at a national level competition.

Table 4.3 also shows that 392 (66.8%) athletes had not competed in national athletics competitions while at primary school level of education. This is higher than the percentage of participants who had not participated in ball games where 195 athletes (33.2 %) had such an experience.

Table 4.3 further shows an increase in the number of teacher trainees who had participated in national ballgames competition as they advanced to secondary school level compared to the number that had competed during the primary level of education. It can be observed that 369 (62.8%) trainees had national ballgames competition experience compared to 224 (38.2%) at primary school competition.

Further, table 4.3 shows that the number of teacher-trainees who had participation experience at secondary school national athletics remained low at 197 athletes (33.6%) just as was the case at primary school level of competition, 195 (33.2%).

4.2.6 Number of years Participated at National Competitions

Athletes were asked to indicate the number of years they had competed at national competitions and responded as shown in figure 4. 2.

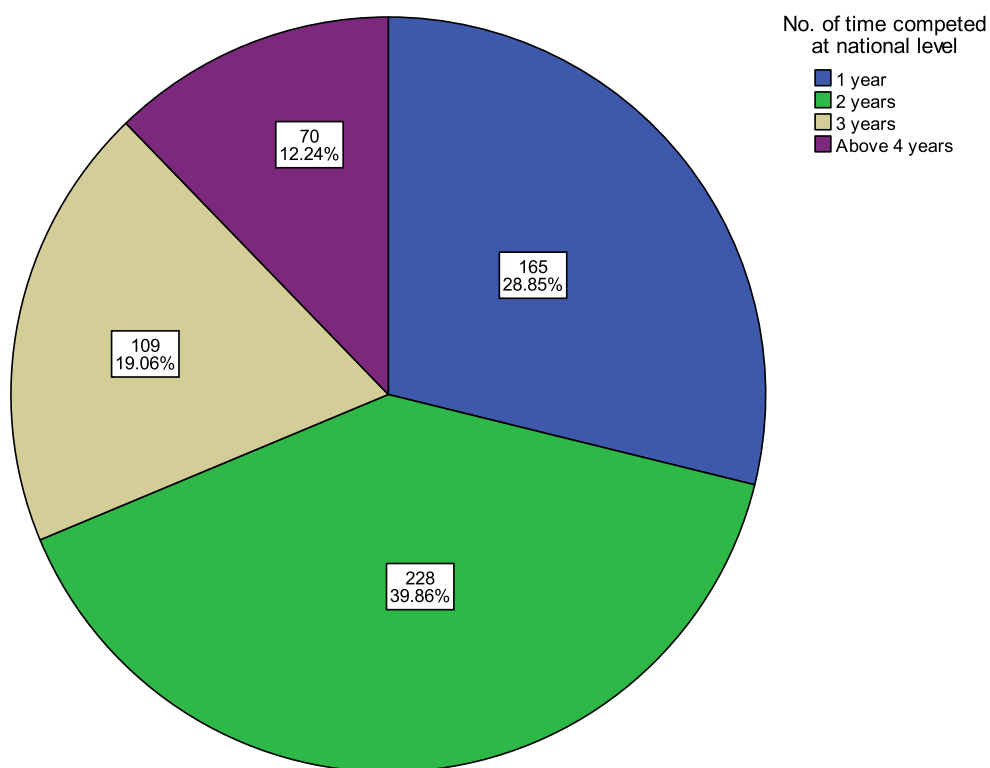


Figure 4.2: Distribution of Athletes' According to Number of Years Participated in a National Sports Competition

Figure 4.2 indicates that 165 athletes (28.85%) had participated for one year, 228 (39.86%) two years, 109 (19.06 %) three years and 70 (12.24 %) had participated for more than four years. It can be seen that the number decreased as competition advanced to college level of education

4.2.7 Description of doping awareness

Athletes were asked to respond to statements intended to measure their level of awareness of doping on (Appendix E). Out of the total 601 who responded to this item 58.4% reported to have heard of the world anti-doping code compared to 250 athletes (41.6%) who were not aware of the existence of the anti-doping code. When asked whether they knew a person who had used performance-enhancing substances, 32.9% of athletes responded to the affirmative while 67.1% were not aware of anyone who had used illegal substance. However, 12.7% reported that they knew of their friends who had doped and 87.3% of athletes were not aware of their friends using banned substances in sports. A large percentage of athletes (73.3%) indicated that it is the duty of an athlete to ensure they obey the WADA anti-doping code while 22.7% felt that athletes have a responsibility regarding staying clean from banned substances/drugs.

Majority of athletes, (96.6%), affirmed that sports participants need to be educated on anti-doping regulations on regular basis compared to only 3.4% who felt that such education is not necessary. Regarding testing athletes for banned substances/drugs 94.3% of athletes reported that sports participants should be tested at all levels of competition while 5.7% noted that such testing should not be undertaken. Athletes were also asked whether they were aware of the effects of selected drugs/substances and their responses are shown in Figure 4. 3.

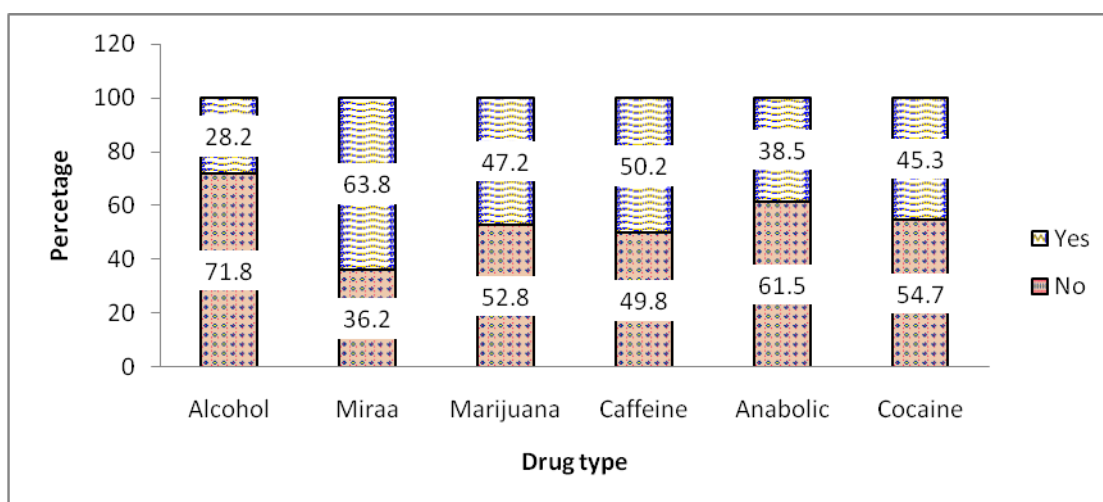


Figure 4.3: Athletes' Awareness on Various Drugs Effects

A large percentage of athletes (71.8%) knew that alcohol could not enhance performance while 28.2% thought that it can enhance performance. While 71.8% of the athletes were aware that khat (*miraa*) would enhance sports performance 36.2% were not aware that it contains some elements listed in the WADC that enhance performance. The study results also indicate that 52.8%, 49.8%, 61.5% and 53.7% of athletes did not consider marijuana; caffeine, anabolic steroids and cocaine respectively as PES.

Majority participants 502 (83%) reported that they were not aware of the effects of drugs and substances such as khat (*miraa*), caffeine, cocaine, anabolic steroids neither their effects to sport performance. A small percentage (17%) was aware of the effects of the drugs and substances. Lack of awareness on the effect of drugs and substances is implied by the fact that only 27.2% of all participants had learnt about doping whereas 73.3% had not had any education.

When asked to indicate where they learnt about doping, athletes responded as follows; through television 427 (78.6%), school/college 447 (82.6%), radio 407(77.6%),

Newspaper 431(81%), magazine 359 (71.8%), seminars 278(57.3%), friends385 (74.2%) parents 297(59.6%).

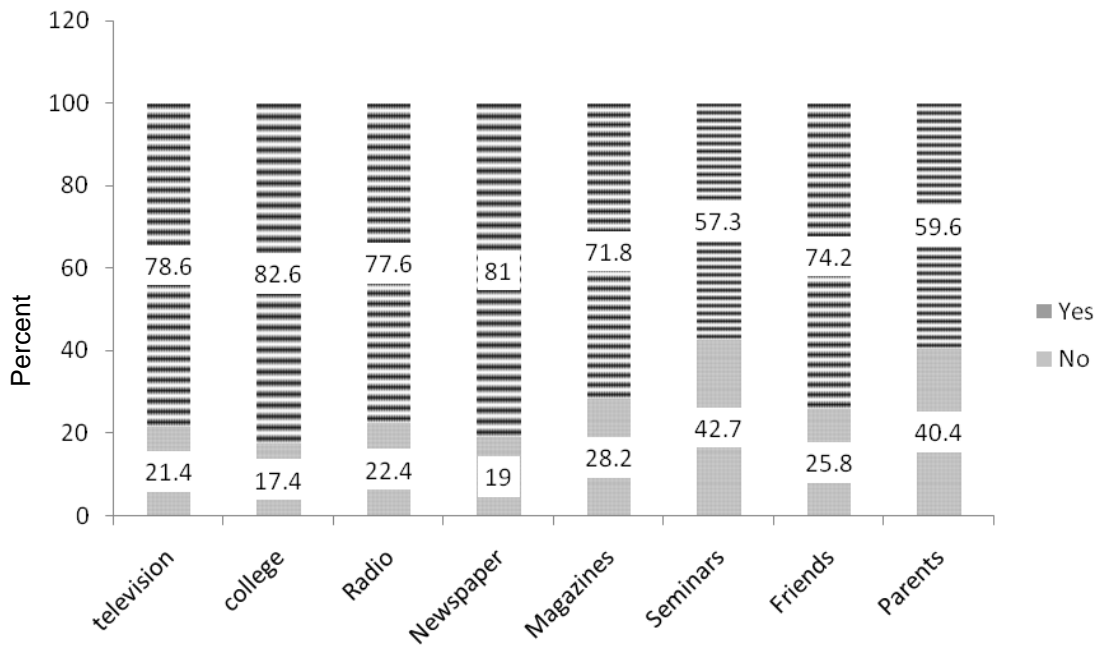


Figure 4.4: Sources of Doping Information

Figure 4.4 indicate doping awareness had been gained at college and also reveals that there were fewer athletes who had learnt about doping from seminars/workshops and from parents/ guardians.

4.2.8 Frequencies of Categorized Composites on Athletes Awareness of PES

Athletes awareness of doping and PES was measured with the use of 23 statements (appendix D section B). A 'yes' response was assigned '1' score and a 'no' response assigned '0' hence the maximum possible score was 23 and the minimum was zero. The participants' responses were aggregated to come up with a composite index on interval scale. Further, the composite index was categorized as shown in table 4.5 in order for the data to conform to other test variables such as gender for the purpose of

testing hypothesis. A participant who scored above 12 points was considered to have above average awareness while participant scoring less than 12 points had below average awareness.

Table 4.4: Frequencies of Categorized Composite Index on Athletes Awareness of Doping and PES Use in Sports by Gender

Gender	Below average	Above average	Total
Female	149(50.0%)	149(50.0%)	298(100%)
Male	144(45.0%)	176(55.0%)	320(100%)
Total	293(47.4%)	325(52.6%)	618(100%)

Table 4.4 shows

that the number of female athletes with above and below average awareness was equal (50%) but slightly more male college athletes had adequate awareness on doping and PES 176 (55.0%) than the female athletes 149 (50.0%). Likewise the number of male athletes lacking awareness on doping stood at 144 (45.0%) while female athletes who felt inadequate on awareness were 149 (50.0%). In total college athletes who reported they had awareness on doping was 325 (52.6%) while the total number of college athletes lacking awareness was 293 (47.4%).

Table 4.5: Frequencies of Categorized Composite Index on Athletes Awareness of Doping and PES by Competition Experience

Competition experience	Above average	Below average	Total
1 year	84 (50.9%)	81(49.1%)	165(100%)
2 years	107(46.9%)	121(53.1%)	228(100%)
3 years	50 (45.9%)	59 (54.1%)	109(100%)
Above 4 years	25 (35.7%)	45 (64.3%)	70 (100%)
Total	266(46.5%)	306(53.5%)	572(100%)

Results on college athletes' awareness of doping and PES in relation to competition experience are shown in Table 4.5. As indicated, 84 athletes (50.9%) with 1 year of competition experience reported that they lacked adequate awareness, whereas 81 athletes (49.1%) reported to be adequately informed on doping in sports. Participants with 2 years exposure to national level competition, 107 athletes, (46.9%) lacked adequate awareness, while 121 athletes (53.1%) felt they were well informed. Further, 50 (45.9%) and 59 (54.1%) of athletes who had competed for 3 years reported having inadequate and adequate information on doping respectively. Amongst athletes with 4 years or more experience in sports participation at national competition, 25 athletes (35.7%) stated they were not well versed with doping information, compared to 45 athletes (64.3%) who affirmed they were well informed on PES use in sports. It is evident from Table 4.6 that athletes who had longer competition experience were also adequately versed with doping information. In total, the differences between athletes lacking adequate awareness and those who noted they were adequately informed was not pronounced.

Table 4.6: Frequencies of Categorized Composite Index on Athletes Awareness of Doping and PES by Type of sport

Type of sport	Below average	Above average	Total
Ball game	210(51.2%)	200(48.8%)	410(100%)
Track event	60 (44.4%)	75 (55.6%)	135(100%)
Field event	22 (34.4%)	42 (65.6%)	64 (100%)
Total	292(47.9%)	317(62.0%)	609(100%)

Table 4.6 further shows that based on type of sport, 210 ball games athletes (51.2%) reported they had no adequate information on banned substances/drugs, while 200 athletes (48.8%) indicated that they were well informed. In track events, 60 athletes

(44.4%) were not sufficiently informed while 75 athletes (55.6%) were aware of PES use in sports performance. Concerning field events participants, 22 athletes (34.4%) affirmed they were lacking in awareness compared to 42 athletes (65.6 %) who pointed that they were adequately versed with doping in sports.

4.2.9 Description of Athletes' Perception to Doping

This section intended to establish athletes' opinions about use of drugs/ substances in sports.

Athletes who felt that it is easy to dope(Appendix F) and not get away with it were 275 (55%) against 221(44.6%) who felt one can dope and get caught. (14.7%) who indicated that they would go ahead and dope if they were sure they would not get detected. However, 466 (83.3%) reported they would not dope even if they got an opportunity. While majority 493 (89.8%) indicated they would be worried about health risks of doping 56 (10.2%) athletes would not care about their health risks.

A total of 101 (18.3%) indicated that they would not feel guilty using performance-enhancing substance/drugs. However, 533 (81.7%) reported that they would feel guilty if they doped even though they were not caught. Most athletes 490 (86.7%) reported they would be ashamed of doping while 75 (11.3%) reported they wouldn't be ashamed of the vice even if they were caught. When asked whether doping in sports improves athletes' confidence 308 (62.5%) disagreed and 185 (37.5%) felt it would boost their confidence.

Further, 262 (58.5%) noted that their friends would not use performance-enhancing substance/drugs while 186 (41.5%) indicated that their friends would not hesitate to dope to improve performance. Most athletes, 319 (65.6%) reported they would not dope because they would not want to lose friends compared to 164 (34.4%) who

indicated that losing friends would not deter them from doping. However, it is important to note that 527 (84.6%) athletes observed that it would be useful to be engaged in discussion on prevention of PES/drugs use in sports whereas 81(15.4%) felt discussion would not be useful in prevention of banned substances.

To establish how athletes fared in terms of the kind of perception of doping and PES use in sports, the sum of the ‘disagree’ and ‘agree’ responses were aggregated to come up with a composite index. A ‘disagree’ response scored 2 points while an ‘agree’ response scored 1 point. The highest sum of ‘disagree’ responses possible was twenty 20 and minimum was 10 .points The composite index was further categorized such that an athlete who scored below 10 points was considered as having the right perception of doping and a score of more than 10 denoted wrong perception of doping. Table 4.7 shows the frequencies of ‘disagree’ and ‘agree’ responses indicating a right and wrong opinion of PES use in sports among Kenya Teachers Colleges athletes by gender.

Table 4.7: Frequencies of Categorized Composite Index on Athletes’ Perception of PES by Gender

Gender	Disagree/right	Agree/wrong	Total
Females	207(69.5%)	91(30.5%)	298(100%)
Males	217(67.8%)	103(32.2%)	320(100%)
Total	424(31.4%)	194(68.5%)	618(100%)

Table 4.7 shows the number of female and male athletes who thought doping and PES are not good for an individual and sport was 69.5% and 67.8% respectively. However 30.5% and 32.2% of female and male athletes had wrong perception of PES respectively.

Table 4.8: Frequencies of Categorized Composite Index on Perception of PES by Competition Experience

Experience	Disagree/Right	Agree /Wrong	Total
1 year	109 (66.1%)	56 (33.9%)	165(100%)
2 years	153 (67.1%)	75(32.9%)	228 (100%)
3 years	79(72.5%)	30 (27.5%)	109 (100%)
Above 4 years	51 (72.9%)	19 (27.1%)	70 (100%)
Total	392 (68.5%)	180 (31.5%)	572 (100%)

On the basis of competition experience, majority of college athletes had the right perception 392(68.5%) about doping and PES compared to 180 (31.5%) with wrong opinion as shown in Table 4.8. It is reflected in table 4.8 that as competition experience increase so does the athletes' perception becomes positive that is, an individual sees doping as unfair and bad for sport. Participants with one year experience 109 (66.1%), two years 153 (76.1%) three years experience 79 (72.5%) and those with 4 and more experience 51 (72.9%). However the percentage differences are small.

Table 4.9: Frequencies of Categorized Composite Index on Athletes' Perception by Type of Sport

Type of sport	Disagree /Right	Agree /Wrong	Total
Ballgame	263 (64.1%)	147 (35.9%)	410 (100%)
Track event	106 (78.5%)	29 (21.9%)	135 (100%)
Field event	50 (78.1%)	14 (21.9%)	64 (100%)
Total	419 (68.8%)	190 (31.2%)	609 (100%)

Perception of athletes competing in ballgames, track events, and field event is reflected in Table 4.9 where (263) 64.1%, (106) 78.5% and (50) 78.1% in ball games,

track event and field events respectively being of the opinion that doping and PES is not good for sports competition. However in ballgames 147 (35.9%), 29 (21.9%) in track events and 14 (21.9%) in field events had wrong perception of doping and PES use.

4.2.10 Descriptions of Athletes' Attitude to Doping

Athletes were asked to indicate their beliefs regarding statements intended to measure their attitude towards PES use. Attitude was measured on five point Rikert scale where a participant was to tick the most appropriate as far as their attitude to doping stood at the time. The choices ranged from strongly disagree to strongly agree and points assigned as follows; strongly disagree-1, disagree-2, neutral-3, agree-4 and strongly agree-5. The highest score an athlete could score in each item was 5points and the minimum was 1 point. Out of the whole attitude section of the questionnaire an athlete could score a maximum of 85 points and a minimum of 17 points. A lower score signifies negative attitude to doping while a higher score denoted a positive attitude.

Table 4.10: means and standard deviations on Athletes' Response to Attitude Statements

Attitudes statements on PES use in sport	Mean	Std. Deviation
Use of enhancing substance/drugs in sports is necessary to be competitive	1.47	0.91
Doping is not cheating since everybody does it	1.71	1.07
Athletes in my sport are pressured to take performance enhancing substances/drugs	1.75	1.13
Athletes have no alternative career choices, except sport	1.8	1.13
Doping is an unavoidable part of the competitive sport	1.81	1.15
Legalizing performance enhancements/drugs would be beneficial for sports	1.81	1.24
Recreational substances/drugs help to overcome boredom during training	1.89	1.16
Media should talk less about performance-enhancing substance/drugs	1.89	1.22
Athletes often lose time due to injuries and drugs can help make-up the lost time	1.9	1.23
Athletes who take recreation substances/drugs should not feel guilty about breaking the rules	1.96	1.18
No difference between drugs and fiberglass poles & speedy swim suit that are all used to better performance	2.16	1.13
The media exaggerates the doping issues out of proportion	2.18	1.28
The risks related to doping are exaggerated	2.29	1.25
Athletes use substance/drugs because they help them in sports situations	2.3	1.31
Recreational substances/drugs boost an athlete's morale to train and compete at the highest level	2.31	1.37
Health problems and injuries sustained during training are just as bad as those incurred from doping	2.54	1.44
Only the quality of performance should matter	2.88	1.50
Combined items	2.04	0.60

Further, table 4.10 shows means and standard deviations with respect to the items that measured attitudes towards doping and PES. It is indicated there were relatively strong disagreements to the statements that encourage doping. In particular, the athletes scored least means in the item on necessity of doping and PES for competition (1.47 ± 0.91), doping to cheat like everyone else does (1.71 ± 1.07),

pressure to use enhancing substances and drugs (1.75 ± 1.13), unavailability of doping (1.81 ± 1.15), lack of alternative career paths for athletes (1.81 ± 1.13), and legalization of doping and use of PES (1.81 ± 1.24). A low score in these negatively oriented statements indicate that there was a strong resolve against doping and use of PES among collegiate athletes measured on a Likert continuum of between 1 and 5.

It implies that most of them disagreed with statements, and therefore express that they would not engage in doping, given an opportunity.

However, there were athletes who showed agreement to statements that encourage doping and use of PES. They felt that the quality of performance is the only thing that mattered in sports ($\text{mean} = 2.58 \pm 1.50$) yet they were cognizant of the health problems that arise from doping and the use of PES ($\text{mean} = 2.54 \pm 1.44$). The overall mean for all items was 2.04 ± 0.06 was not any different from the means of individual items. These scores show a mixture of attitudes toward doping and use of PES, but indicate that these athletes would be more inclined to doping.

4.3 Testing of Hypothesis

4.3.1 Awareness on Doping and PES in Relation to Gender, Competition Experience and Type of Sport

It was hypothesized that there would be no significant relationship between awareness of doping and PES in sports and athletes' gender, competition experience, and type of sport competed. To determine whether there was such an association Chi-square was computed of which results are shown in Table 4.11

Table 4.11: Chi-Square on Athletes Awareness on Doping and PES by Gender, Competition Experience and Type of Sport

	value	df	sig
Gender	1.55	1	0.21
Experience	4.59	3	0.20
Type of sport	7.15	2	0.03

The difference in the number of male and female athletes who noted they were adequate on PES awareness did not differ much. This is further confirmed by statistical test where the computed $\chi^2 = 1.55$, $p > 0.21$ indicates no statistically significant association between college athletes gender and awareness on doping and PES. Therefore the null hypothesis that there is no significant association between gender and doping awareness was accepted.

To test whether there was any relationship between competition experience and awareness of PES the χ^2 value of 4.59, $p = 0.20$ indicated no significant relationship. Therefore, the null hypothesis that there was no significant relationship between the number of years athletes participated at a national competition and awareness of PES use in sports was accepted.

The Chi square test for relationship between type of sport and awareness of PES yield a χ^2 value of 7.15 revealing a significant relationship ($p = 0.03$) between the type of sport an athlete participated and doping awareness. Thus the null hypothesis that there was no significant association between type of sport athletes participated and doping awareness was rejected.

Table 4.12: Chi-square on Athletes Perception of Doping and PES use by Gender, Competition Experience, and Type of Sport

Pearson chi-square	Category	value	df	Sig.
	Gender	0.20	1	0.66
	Experience	2.08	3	0.56
	Type of sport	12.66	2	0.01

To test whether there was any association between gender and perceptions of PES use in sports the chi-square test value of χ^2 0.20 ($p=0.66$) shown in table 4.12 indicated no significant association. The hypotheses stating perception of doping and PES by athletes in teacher training colleges will not significantly differ on the basis of gender was therefore could not be rejected.

To establish whether there significant association of athletes' perception of PES use in sports and the number of years athletes had participated in national competitions chi-square test was conducted. The calculated chi-square value of χ^2 2.08 ($p=0.56$) indicated no association hence the hypothesis purporting no association between college athletes perception of doping and PES and experience in competition was accepted.

However a significant relationship was established between athletes' perception of doping and the type of sport participated in. The chi-square test computed yield a value of χ^2 12.66 ($p=0.01$) indicating a significant relationship between athletes' perception of doping and PES use in sports and type of sport. The null hypothesis (H_{02}) that predicted no association between perception of doping and PES by teacher training colleges' athletes and type of sport was rejected.

4.3.2 Attitude to Doping and PES between Males and Females

It was hypothesized that attitude to doping and PES would not significantly differ in relation to gender, competition experience, and type of sport.

Table 4.13: t-test on Athletes' Attitude to Doping and PES by Gender

Gender	N	Mean	Std. Deviation	t	df	t-value
Females	297	2.06	.58	0.10	609	0.32
Males	314	2.01	.63			

Table 4.13 shows that the means for attitude score between male and female were almost similar at 2.06 ± 0.58 for female and male 2.01 ± 0.63 indicating little variance in attitude to doping and PES use in sports. Further, to determine whether there were significant differences in attitude to doping and PES between male and female athletes, t-test was computed as presented in Table 4.14. The t-test results indicated that the difference in attitudes to doping and PES between males and females was not statistically significant at $p > 0.05$. As such, the null hypothesis H_{03} that the attitude to doping and PES by Kenya teacher training colleges would not significantly differ according to gender was accepted.

4.3.3 Attitude to Doping and PES in Relation to Experience in Competition

It was hypothesized that there would be no significant differences between athletes' attitude to doping between athletes with varying competition experience.

Table 4.14: Means and Standard Deviations and ANOVA on Athletes Attitude to Doping and PES by Competition Experience

Competition experience	N	Mean	Std. Deviation	ANOVA P-Value
1 year	163	2.021	0.607	0.89
2 years	224	2.056	0.581	
3 years	109	2.058	0.590	
4 years & above	70	2.007	0.757	
Total	566	2.041	0.613	

As shown in Table 4.14 the means did not vary much for athletes with varying competition experiences. The results indicate that the group of athletes with the highest mean was those with 3 years' experience, a mean of 2.05 ± 0.59 while the least was in the group that had 4 years and above, a mean of 2.00 ± 0.76 . To determine whether there were significant differences of means amongst competitors with varying competition experiences one way ANOVA was computed of which results are shown in Table 4.14. The ANOVA results indicate that the differences for group means by competition experience was not statistically significant, $p=0.89$. Thus, the hypotheses H_{03} that attitude to doping and PES by Kenya teacher training colleges athletes would not significantly differ according to experience in competition was accepted.

4.3.4 Attitude to Doping and PES Based on Type of Sport

Table 4.15 shows mean difference for attitudes to doping and PES based on the type of sport. As indicated, the group with the highest mean was athletes in ball games

field events, 2.13 ± 0.63 , while the means for field events, 1.91 ± 0.53 and track events 1.86 ± 0.51 were almost equal.

Table 4.15: Descriptive of Attitude to Doping and PES based on Type of Sport

	N	Mean	Std. Deviation	ANOVA: P-Value
Ball game	404	2.13	0.63	0.01
Track event	134	1.86	0.51	
Field event	64	1.91	0.53	
Total	602	2.04	0.61	

A one-way ANOVA was conducted to establish whether the differences in these groups' means would be of statistical significance. The ANOVA indicated in table 4.15 show $p=0.01$ indicating that the means for groups according to the type of sport had statistically significant differences. To establish the source of the differences in group' means Scheffe test computation indicated source of the difference between ballgames and track and, between ballgames and field events.

Table 4.16: Scheffe post hoc Test for Attitude Differences in Types of Sport

Sports participated in	Sports participated in	Mean Difference	Sig.
Ball game	Track event	0.272	.000**
	Field event	0.227	.018
Track event	Ball game	0.272	.000**
	Field event	0.045	.882
Field event	Ball game	0.227	.018
	Track event	0.045	.882

** $P < 0.001$.

Thus, the hypotheses H_{03} that attitude to doping and PES by athletes in teacher training colleges will not significantly differ in relation to the type of sport was rejected.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter presents discussion of the research findings on demographic profiles of college athletes, awareness, perception and attitudes to PES use in sports by Kenya teachers colleges athletes.

5.2 College Athletes Demographics

As shown in figure 2 there was almost equal representation by both male and female participants at the indicating that the KTCSA offers equal participation in sports to men and women. All zones present equal number of male and female athletes'/ teams to national athletics and ballgames competition. Majority of participant were 18-22 years age category with few above 26 years. This age distribution is not unusual considering that secondary schools graduates seek career placement almost immediately after finishing school. Athletes aged above 26 years may have represented the late entrants to college.

Participation in national competition by type of college reveals that majority (90%) of athletes were enrolled in public teacher training colleges as opposed to 7.6% from private colleges. This disparity may be attributed to the fact that enrollment in public colleges is higher than in private colleges. Considering that a competition zone comprises of both private and public colleges the probability of public institutions with higher student population taking up more slots in ballgames and in track and field athletics were higher. Another possible explanation for the disparity in representation at national sports competition could be that private teacher training

collages being commercial oriented investments do not invest/support for co-curricular activities such as sports hence only few athletes reach to national competitions

In terms of participation by type of sport, there were more athletes participating in ballgames than those in track and field athletics. This however is not unusual considering ballgames are team sports while track and field athletics are individual sports with exemption of relay (4x100m and 4x400m) races. There is also the likelihood that some athletes may have participated in both ballgames and track and field athletics.

Distribution of athletes in specific ballgames portrays soccer and hockey with more participants, a situation that can be explained by the fact that the two sports require a higher number of players to make a team. For this same reason volleyball and basketball had the lowest number of participants. Handball and netball teams comprise of the same number of players hence equal number of participants at national competitions. Disparity in representation could also have been due to some players not participating in the study considering that the rate of participation was 89.4%.

College athletes' previous participation in national competitions while in primary and secondary school show that at both levels majority engaged in ballgames than in track and field events. Low participation at primary however may be attributing to schools not having fields/pitches for ball games and probably none would have adequate to cater for entire school population hence few students get an opportunity to participate in sports. Such a situation also means few students might have had an opportunity to get awareness on anti-doping regulations, if at all it was offered to athletes. Low

participation percentage may also be explained by the fact that for an individual to have participated at national level he/she would have to have been selected on merit right from the division, district to national level. This means only few talented individuals could make it to compete at the highest level.

A huge proportion of 392 (66.8%) athletes had not competed in national athletics competitions while at primary school level of education. Most schools probably would prefer to establish courts/pitches for ballgames on the little space available than track and field events areas which require large space. This means students interested in track and field athletics are likely to graduate from school with minimal or no sports participation experience. In addition, there are fewer competition slots/chances for track and field events, compared to ball games. This means students interested in track and field athletics are left out with minimal or no participation.

It can be observed from table 4.3 that 369 (62.8%) trainees had national ballgames competition experience compared to 224 (38.2%) at primary school competition. Increased sports participants in secondary school level compared to primary school may be reflecting on the need to educate athletes on doping and PES use in sports as most participants may be developing skills in readiness to taking sport as a career. Further, table 4.3 shows that the number of teacher-trainees who had participation experience at secondary school national athletics remained low at 197 athletes (33.6%) just as was the case at primary school level of competition, 195 (33.2%). This may be attributed to lack of track and field event facilities due to insufficient space which further compounds participants' exposure to sports participation. Other factors that could be used to explain this is lack of experienced coaches for track and field athletics and the fact that it may be easier to participate in ballgames even when out

of school since ball games facilities may be easier to access at community level compared to track and field events. At the community level, games such as soccer, volleyball, basketball, and handball are likely to be played in public fields/stadiums hence more college athletes may have had an opportunity to engage in ballgames of their choice.

Participation in national sports competitions decreased as athletes advanced to college level of education. Decrease in participation may be attributed to fewer chances available for individuals to participate probably due to high population of student in teacher training colleges (mostly in public colleges) and few sports facilities. In most public institutions only a single pitch/court for a specific sport would be available to cater for male and female participants hence allowing only a few interested athletes an opportunity to participate and less time to practice sport skills to qualify for national level competition.

5.3 Doping Awareness

Findings of this study show (Appendix E) that college athletes lack doping awareness regarding doping regulations considering 41.6% did not know that there is anti-doping code on banned drugs/ substances. It is likely that such athletes could contravene anti-doping regulations and therefore get banned from sports competitions. As potential teachers college athletes may not be sufficiently informed to guide school athletes to participate without resorting to PES either knowingly or unknowingly. Although a small number, 12.7 % knew friends who were using PES. This may point to the probability of peer influence to use PES. Similar observation is made by the anti doping report (Republic of Kenya, 2012) where 17.9% of 357 respondents said they were using PES due to peer pressure This is an indication that doping may be going

on amongst college athletes. This could have a bearing on the study report by NACADA, (2012) whereby respondents from post secondary institutions were using narcotics such as bhang and cocaine. NACADA, (2012) reports 9.3 % respondent in 18- 24 and 24-35 years age categories were using Khat (*miraa*). Kenya teachers colleges athletes fall under these age categories. The NACADA (2012) report further indicates that 2.0% of students were consuming khat (*miraa*). This is an indication that both teachers and students may be in danger of using PES in sporting situations.

This study findings show that college athletes knew it is the responsibility of individual athletes to ensure they have not used any PES. This response may be an indication of the willingness of college athletes to engage in sports unladed with PES. Still, majority of college athletes (96.6%) noted that athletes should be tested for performance enhancing substance. A large number of athletes (94.3%) further concurred that testing for banned substances should be done at all levels of competition. These positive responses indicate the willingness by athletes to embrace clean sports and desire for awareness on doping issues. The need for athletes testing for banned substance is also emphasized in the anti-doping task force report (Republic of Kenya, 2012) where it is noted that education and awareness on anti-doping regulations should be cascaded to the grass roots.

Figure 4 shows the distribution of doping substances that may be abused by collegiate athletes. About 71.8% of athletes observed that khat (*miraa*) could enhance performance but 36.2% ignorant that Khat (*mirra*) is not an enhancer indicate that some college athletes lack awareness of doping. Athletes who reported that khat (*miraa*) could enhance performance may still be at risk of using PES unknowingly. The anti doping code stipulates that an athlete who unknowingly test positive for

banned substance shall be guilty of the offense. An athlete who uses khat (*miraa*) not only risks a ban but also their health. Though majority of athletes (73.8%) knew alcohol is not an enhancer there were still 28.2 % who thought it could improve performance. Alcohol can only impair sports performance negatively. Although alcohol is not listed as banned substance by WADA, higher content levels in an athlete's blood than the 0.10 g/l quantity allowed could lead to a ban. If an athlete involved in competition is under the influence of alcohol, safety of other participants is at risk. Kenya colleges' athletes who reported alcohol as an enhancer probably were not aware that WADA has prohibited use of alcohol for particular sports including archery, air sports, automobile, karate, motorcycling, and power boating.

Findings of this study show that college athlete had not received doping education since 73.3% observed they had not learnt about doping. To entrust such a teacher to the primary or secondary school athlete as a PE teacher or coach would not benefit the athletes as far as PES issues are concerned. Athletes handled by a coach ignorant of anti-doping regulations/substances may unknowingly ingest banned substances and as a coach may give young athletes banned substances to ingest. The anti doping taskforce report (republic of Kenya, 2014) indicate that athletes in various sports including athletics observed they had never discussed doping issues with the coach or their respective federations.

Some sources of doping (fig. 5) by athletes cannot be described as credible. Most of them had learned from television, Newspapers, radio, magazines. But this is probably because those sources of information were readily available in colleges and could be accessed freely. However 81% had learnt from school/ college but this contradicts previous athlete's observation that they had not learnt about doping. It could either be

that the doping content in teacher education curriculum may be insufficient or it is not taught sufficiently. Parents seemed to be the least source of doping information by college athletes yet they can be termed the most credible sources. Perhaps the college athletes being adult they no longer consider parents as a source of information. Another possible explanation is the peer influence since in college level students mix freely and are bound to share information regardless of whether it is correct information or not. Friends are likely to be consulted more than parents. Athletes had also noted that they knew of friends who use banned substances indicating a lot of interaction among them.

Findings in this study (Table 4.7) revealed there was no significant relationship between Kenya teachers colleges athletes' awareness of doping and gender. This is indicated by the categorized frequencies (Table 4.4) that the differences on awareness between male and female athletes were not pronounced. But almost equal number of male and female had below average awareness, an indication for a need to raise college athletes' awareness. However more female (149) athletes lacked awareness compared to male athletes (144) similar to Corbin et al., (2004) findings of USA college where male athletes were better informed than female athletes. Some possible explanation for more male athletes being more aware is that as reported anti-doping taskforce (Republic of Kenya 2014), there were more male teams that receive some doping information occasionally in seminars especially in soccer teams. Male athletes are probably more open in sharing information hence more male reported to be aware of doping issues. However significant differences in doping awareness between male and female athletes have been reported by Green and Uryasz (2001). On the other hand Crabbe (2001) posits that awareness of banned substances may not translate to good practice because as stated, although male athletes had received more education

on doping in sports they were still five times more likely to drink alcohol than their female counterparts despite its negative effects on sports performance. Generally there were male and female athletes lacking awareness among college athletes which may be attributed to lack of education on banned drugs at all levels of competition. This can be attributed to the fact that coaches hardly discuss doping matters with athletes (Republic of Kenya, 2014). The federations are also reported to rarely hold seminars to educate athletes about use of PES in competitions.

There was no significant association of athletes' awareness of PES in relation to competition experience. This means the number of years an athlete had competed at national competitions had no influence on the awareness of banned substances. This may be an indication that if college athletes may not have been educated at primary and secondary school he/she will remain ignorant at whatever level of competition. Since coaches and sports federation rarely hold seminars to discuss doping with athletes (Republic of Kenya, 2014) it is possible for college athletes to have participated for some years without learning about banned substances. This study however established there was significant association between type of sport and awareness of PES. Athletes in track and field events were more aware of banned substance use in sports. This is also reflected by in table 4.6 where 65.6% and 55.6%, of field and track athletes respectively had above average awareness of PES compared to 48.8% of ballgames players. This can be explained by the fact that track and field athletes compete individually and as demonstrated by research finding they are more likely to be aware of banned substance because of the stiff competition where an individual may be tempted to dope. Report on doping situation by Kenya republic of Kenya (2014) indicate that majority of athletes who have tested positive to substance

use in sports are from track and field athletics. The report also indicates that some of them doped knowingly.

This study findings are in agreement with Lubna et al., (2008) where Jordanian students and college athletes lacked awareness on doping , Feinberg (2009) reports on lack of awareness by polish athletes and Ama et al., (2003) reporting doping awareness by Cameroonian soccer players being vague and insufficient. It was hoped that since Physical Education in Kenya Teacher trainee education course is a compulsory subject where the content on doping and substance use is outlined in the curriculum, there would be significant awareness on doping among the collegiate-athletes.

These findings also concur with the observations of the study by Corbin et al., (2004), Nowesielski and Swistkowska, (2007) and Feinberg (2009) where team sports players are reported to have been more awareness of PES than those in individual sports. Lack of doping awareness by Kenya Teachers Colleges athletes may be attributed to either lack education on banned substances probably from the time they were in primary school.. It could be that by the time of the study some of the teacher-trainees had not yet covered the PE syllabus content on doping hence some respondents had no relevant information or knowledge of the PES. It could also be an indication that trainees went through primary and secondary education without having been imparted with knowledge on anti- doping issues. This is supported by anti-doping report where it is noted that sports federations such as AK has failed to reach athletes at the grassroots levels with education on anti-doping (Republic of Kenya, 2012).

There is also a possibility that some of the athletes were in their first year of study and could be that the content on doping had not yet been learnt or may have been taught

inadequately. This notwithstanding, the large number of athletes not fully informed on performance enhancing substance use in sport calls for an urgent need for collaboration that by all stakeholders to reflect on the need to educate athletes on doping and performance-enhancing use in sports as most participants may be developing skills in readiness to taking sport as a career. The KTCSA would be expected to have instituted some form of forum where all participating athletes and personnel are inducted on the anti-doping code requirement and regulations well before the national competitions. After all WADA expects that sports federations/associations would raise athletes' awareness on anti-doping regulations.

College administrators should be concerned that college trainees are potential teachers expected to either be primary or secondary school physical education and athlete sports personnel as trainers or as coaches yet they are not well informed on doping matters. As reported by Lubna et al., (2008) there are athletes who are supplied with doping substances by the coaches, athlete-team staff and their friends. Without proper information Kenya Teachers Colleges athletes on becoming PE and sports coaches may misguide or probably supply athletes with doping substances.

Studies have reported alcohol to be the most widely consumed substance by college athletes and students (Green & Uryasz, 2001; David et al., 2005). Although alcohol is not among WADC list of banned substances and athletes may consume not to enhance performance, they need to be aware that alcohol has negative affects to performance. There is also the risk of being suspended from competition as a result of negative behavior associated with drunkenness since it impairs judgment and reasoning and causes mood instability. McDuff et al., (2005) reckons that alcohol consumption affects psychomotor skills and aerobic performance due to its slow/fixed

rate of metabolism and its toxic interference with energy and carbohydrate metabolism.

Education on drugs and substance use should start early before the trainee is enrolled in a college (it should start at primary school) hence parents role cannot be underestimated. Some sources of doping knowledge/awareness such as television are questionable since as noted by Nowosielski and Swiatkowaska, (2007) media sometimes broadcast more for- than anti- doping programs. Morrison, Karin and Morrison (2004) have reported that print media and television have been used to portray 'ideal' male body, which in turn may encourage use of PES by young athletes in order to get the 'ideal'. A large and positive coverage of high profile athletes who have used PES may encourage young athletes into the behavior. Research studies by Yesalis & Barhke, (2000), Caffee & Fadale, (2006) have observed that high profile athletes act as role models and may be used to shape ideas and attitudes. It is imperative to underline that raising awareness has not always translated to change in behavior. In this study athletes observed they had learn about PES in school/college yet they their awareness isn't reflecting the same. In Whitaker (2012) study indicate majority of athletes noted they had been educated on banned substances yet they reported they would dope given an opportunity.

This study has evidence that athletes were aware of health risks of doping but they would still go ahead and use PES. Further, athletes were cognizant of the risks of doping and that they would be compared to the risk of injury. This is consistent with the observation by Bandura (2004) that doping education cannot be effective unless accompanied with moral and ethics education. Further, it indicates that awareness alone is not sufficient deterrent to doping because despite anabolic steroids having

been outlawed by IOC few months to the games, eight athletes tested positive during the 1976 Montréal Olympics (Petroczi, 2007; Lubna et al., 2008). The study results show that majority of athletes (58.4%) were aware of the existence of the WADA code. But, as reported by Morente-Sanchez & Zabala, (2013) it is not unusual for an athlete to be familiar with anti-doping rules but still display lack of knowledge. The (41%) athletes who were not aware of the Code should be a cause for concern to KTCSA sports because it means athletes are also ignorant of its content. This means such athletes are likely to breach WADA regulations unknowingly and may get implicated with doping offences. College athletes to be well informed of the code and guidelines there in, so that when they graduate and start teaching PE and sports coaching at primary and secondary schools they will be better equipped to educate young athletes on anti-doping regulations. The fact that 32.9% of respondents knew of individuals who had used performance-enhancing substances and a 78 athletes (12.1%) had friends who dope indicates that doping is a threat to college sports.

Lack of awareness by college athletes should be of concern considering that teacher trainees are likely to be future role models and coaches to primary and secondary school athlete. A coach ignorant on anti-doping matters may unknowingly supply athletes with doping substances or support the behavior. As observed by Lubna et al., (2008) and Alaranta et al., (2006) coaches supplied athletes with PES. A member of the USA Olympic team is reported to have been doped by the coach with steroids without consent thus destroying his immune system and eventually stopping his career (Haley, 2003) and so were the Russian Olympic athletes doped unknowingly Corbinet al., (2004). There is a call for strict measures to ban doping and to avail doping education to every sports participant on the need for honesty and hard work

that would lead to success in performance without putting an individual at risk (Kumar & Joyti, 2013).

Teacher training college athletes should graduate to be coaches of integrity and responsible in guiding and protecting young athletes from the negative effects of doping drugs and substances. Kenya college athletes noted the need for doping control in sports at all levels of competitions where 96.6 % were of the opinion that education of athletes on doping is crucial. In their study, Scarpin et al. (1990) reported that athletes were in agreement that there is need for strict controls during training and competition. It is suggested that increasing the frequency of doping control and when done for the whole training and competition period would reduce and/or prevent doping and performance-enhancing drug use by a large proportion of athletes (Levent et al., 2005). This opinion is however in contradiction with observations by Insel and Roth (2002) that although doping is not worth the risk taken, most of the athletes who use banned substances are aware of their adverse side effects to competition and participants' health but they chose to ignore likely consequences.

As Levent et al. (2005), observes, there are steps made by anti-doping agencies in collaboration with governments and sports governing bodies to control doping. However, there are outstanding gaps, as characterized by the frequency of failed test among athletes. These gaps, as shown by the lack of awareness by college athletes, may be present in Kenya. This has been found among Turkish athletes who acknowledged they were not fully aware of the full drug potential and effects (Levent et al., 2005). Young athletes are likely to suffer the most from health problems associated with the drugs as well as chances of being suspended from the sports. After

all as reckoned by Lubna et al., (2008) when athletes are equipped with knowledge of adverse effects of doping drugs their perception can be influenced for the better.

It is encouraging that a number of college athletes were aware of the risks of doping and PES use in sports but such athletes may require constantly to be re-educated about the negative effects of doping and PES to an individual's health and sports participation. Athletes who may think that doping education is not necessary are likely to be victims of performance offences if they are not educated on anti-doping code requirements. Sports federations/associations are charged with the responsibility of ensuring that athletes are properly informed of the WADC requirements (WADA, 2014).

Overall, this study findings indicate there were track and field events and ballgames competitors in 2012 KTCSA national sports competitions whose awareness of banned substance in sports was wanting.

5.4 Perception of Doping

The perception a team or an individual holds regarding doping in sports determines the kind of risk likely to be undertaken by the individual or the team. Some trainee athletes were of the opinion that it is easy to dope(44.6%) and get away with it without getting detected and (14.7%) further expressed that they would dope if they got an opportunity. Wrong perception of doping displayed by Kenya college athletes is a cause for concern since it may be an indication of athletes who would probably engage in doping behavior in future. This wrong perception held by potential primary and secondary school physical education/coaches should be a cause for the stakeholders including college tutors, Ministry of Education, sports federations,

NOCK , AK, and parents/guardians. The 80 athletes who reported some inclination to doping is a considerable number given that it takes only an athletes' intention or actual act of doping for an individual or team to be disqualified. However, 466 (83.3%) reported they would not dope even if they got an opportunity. This right perception should be upheld through regular and sustained doping education. While majority 493 (89.8%) indicated they would be worried about health risks of doping 56 (10.2%) athletes would not care about their health risks. An athlete who would not mind health risks of doping may be acting on ignorance regarding the magnitude of the real damage to one's health and sporting career that may result from using variety of doping substances. Athletes with similar opinions are reported in research studies by Feinberg (2009), and Whitaker (2012) where athletes observed that if doping would guarantee a win they would go ahead and dope even though they would die after five years due to effects of substances. If the 18.3% who indicated they would not feel guilty using performance-enhancing substances were members of a sports team and were detected to have ingested banned substances or having the intention to dope, it would lead to disqualification of the whole team, loss of medals and tainting the reputation of the team and the country represented. It would be very difficult to regain lost reputation and future athletes would most likely be viewed or judged on the past doping breaches committed by others. The 81.7% who reported that they would feel guilty if they doped even though they were not caught should be nurtured to hold the right perception and be role models to young athletes. Athletes need to be informed that competition is not all about medals and positions. As noted by Butcher & weust (1999) sports participation first and foremost is for developing character and good values beside fun and enjoyment. Participation for enjoyment and socialization as one bonds with the team members should be appreciated. Teacher trainees with

wrong perception of PES cannot be reliable or trusted to regulate school athletes' behavior and attitudes, neither would they be competent to transfer knowledge and influence right perception to the young athletes entrusted to them. As Lubna et al., (2008) reports some students and athletes reported they were supplied AAS by coaches. When an athlete recognizes that the role model is breaching regulation on anti-doping they are bound to hold wrong perception on banned substances and demonstrate lack for respect for laid down rules of sports competition

Most athletes 490 (86.7%) reported they would be ashamed of doping while 75 (11.3%) reported they wouldn't be ashamed of the vice even if they were caught. This perception is very bad for the sport competition considering the respondent is likely to be a PE teacher/ coach/role model to the upcoming athletes. Zelli et al., 2010 has identified teachers as important in guiding high school athletes especially because boys may be concerned with muscularity and girls by thinness. Such student are said to be vulnerable to banned substance use because they most likely would be tempted or enticed easily to use PES to achieve the kind of body image they desire. This is the kind of Guidance College athletes would be expected to play if at all they will be PE teachers/coaches. Some college athletes when asked whether doping in sports improves athletes' confidence 308 (62.5%) disagreed and 185 (37.5%) felt it would boost their confidence. Athletes need to be exposed to acceptable methods of coping with pressure and stress that may accompany sports competition. Insel and Roth, (2004) recommended such methods including imagery, and self-talk. Further, 262 (58.5%) noted that their friends would not use performance-enhancing substance/drugs while 186 (41.5%) indicated that their friends would not hesitate to dope to improve performance. This should be a worrying situation considering peer pressure influence in youth behavior. Most studies (Whitaker (2012), levent et al.,

(2005). Dimeo (2013), report peer influence as the reason why athletes dope. Most athletes, 319 (65.6%) reported they would not dope because they would not want to lose friends compared to 164 (34.4%) who indicated that losing friends would not deter them from doping. This large number of athletes who don't seem to have a firm stand regarding use of illegal methods to improve performance suggests urgent need for urgent intervention. Studies elsewhere have reported athletes who noted their fellow athletes would influence their opinion on banned substances. Whitaker (2012) reported 88% of athletes in the study citing that their colleagues were likely to exert influence about whether they would dope or not. However, it is important to note that 527 (84.6%) athletes felt it would be useful to be engaged in discussion on prevention of PES/drugs use in sports whereas 81(15.4%) felt discussion would not be useful in keeping them away from the vice. This implies that discussion may be one avenue of not only raising awareness, but also fighting the vice. Since testing and sanctions have not substantially deterred athletes from doping other strategies such as athletes being engaged in discussions with fellow athletes might bear fruit. This study observes athletes having learnt about doping yet some still reported they would dope if they got an opportunity. Perhaps the method used to educate athletes need to be relooked by concerned doping education seminar organizer and by the college lecturers.

This study had hypothesized that there would be no significant relationship between college athletes' perception of doping and PES use in sports and gender, competition experience and type of sport. Findings, as shown in Table 4.12, indicate that there was no significant association in athletes' perception of doping and gender. Furthermore, almost equal number of male and female athletes had right opinions (Table 4.7) on doping and almost equal number had wrong perception. This may be attributed to athletes being in the same college environment and considering they get enrolled in

colleges almost immediately after graduating from secondary schools. Therefore, they had not interacted much with the out of school environment and with experienced athletes who are likely to be familiar with doping issues. Athletes with right perception of doping may have been guided by their personal moral and ethical standards hence they their stand was against banned substance use to enhance performance.

Finding of this study also indicate no significant relationship between athletes' perception of doping and competition experience. The number of years an athlete had participated at national competitions had no influence on the opinions held about banned substances use. This is not surprising considering the report on anti-doping by Republic of Kenya (2014) that indicates athletes are never educated on doping matters right from the grassroots. This means regardless of how many years an athlete may have participated at national competitions there was no likelihood of getting educated on banned substances.

Findings indicate there was a statistically significant association in athletes' perception of doping/PES, and type of sport. Athletes in track and field events were found to have wrong perception of doping compared to athletes in ball games. This is evident from table 4.9. Teachers who perceive doping to be good for sports are likely to support young athletes in engaging in doping behavior. Nowesielski and Swiatkowska, (2007) findings showed players in handball, soccer and basketball had right perception to doping. However, Petroczi (2007) noted a wrong perception of athletes to doping which may drive an athlete to non-cooperation when required to undergo drug/substance testing. Petroczi (2007) further argues that values attached to winning by an athlete influences the way he/she perceives PES use in sports. A

proportion of Kenyan athletes (34.4%) were of the opinion that PES can be used even though an individual is ostracized by friends and that they would not feel guilty (10.2%) as indicated in appendix E. This kind perception is similar to the opinion held in the findings of Kumar and Jyoti (2013) study where athletes reported that only the quality of work should matter; how one does it should not be an issue. Levent et al., (2005) asserts that such athletes view doping as necessary for success and would even suggest legalizing doping as an acceptable option. In addition, there may be motivation arising from opponents who are doping, with an athlete trying to offset the unfair disadvantage by resulting to use of PES. However, it is encouraging to note that there was a section of athletes (31.4%) who felt that doping is wrong and amounts to cheating. The fact that athletes may dope and not be detected by the responsible anti-doping authority does not make it good for an individual and sport. Instead, it bears an unfair competitive advantage over opponents and puts the health of the athlete at risk (WADA, 2009). However there are a majority who perceived that it would be shameful and a cause for one to feel guilty if detected to have doped. The same athletes felt they would not want to lose friends for being implicated with the vice. These athletes should be nurtured to use sport competition as an avenue for fun, enhancing self esteem/confidence and a channel for expression of sporting talents (Bucher & Weust, 1999).

Petroczi et al., (2008) reporting on college students and athletes perception to doping established that 66% of athletes were of the opinion that doping is useful for one's athletic performance. This observation concurs with Petroczi (2007) findings on the study of male athletes who were found to attach very strong importance to winning which could strongly influence perception to doping. Petroczi (2007) further observes that athletes' personal trainer and role models may have an influence on participants'

perception of PES use. This may also be propagated on media or other participants as reported by Labre (2002). Kenya college athletes are potential role models hence their wrong perception can be trickled down to the young athletes in primary and secondary school. Kenya colleges' ballgames athletes portrayed wrong perception of doping, which is in contradiction with the findings by Dimeo et al., (2013) where team players were shown to have right perception of doping which was attributed to supportive game environment.

This study has established that male athletes displayed wrong perception (32.2%) of doping and PES than their female counterparts (30.5%) even though the difference is small. These findings are in agreement with Peretti- Watel (2004) findings that reports male athletes more likely than the female to agree with the statements portraying performance enhancing substances use in sports beneficial to the user.

Research findings on the blog of Leeds Metropolitan University (1013) indicate that national level male athletes are reported to identify themselves with athletes who dope when compared to female athletes especially if they were to suffer injuries or a dip in sports performance or if they perceive that others are already using PES.

The WADA (2014) emphasizes the importance of doping prevention and intends to make value-based prevention programmes a must in the updated 2015 version of the code. The new code intends to shift the anti-doping education through school curriculum. This will mean that Kenyan college athletes being potential teachers will need to be properly versed with the anti-doping regulations in order to lead, guide and, teach school athletes and students in general the anti-doping regulations in sports.

The current anti-doping policy focuses mainly on testing the elite athletes even though the sub-elite athletes such as the college athletes are reported to use PES to improve performance hence they are not deterred from using illegal substances before they graduate to elite level competitions.

5.5 Attitude to Doping

Athletes mean scores on statements an attitude to doping shown in table 4.10 indicate college athletes had negative attitude leaning on the items that touched on banned substances specifically on competition. They particularly disagreed with the statement that portrayed doping as necessary for a person to be competitive as indicated by a mean of 1.47 ± 0.91 . In other words they did not agree that banned substances should be used for one to gain medals or positions in a competition. They seemed to suggest winning should just be justified by hard work through training. That is, an athlete should put in a lot of effort in training in order to improve their game or race time.

College athletes displayed negative attitude toward sports competitor who think that 'doping is not cheating since everyone does it' (1.75 ± 1.07). Athletes who suspect that other athletes are using PES or who think that athletes would use banned substances if they got an opportunity are described as likely to use performance enhancers in future. The problem with such attitude is that when it is held by a senior athlete it is likely to influence the junior athlete as well who may be looking up to them as role models. Mazanov et al, (2008) study established athletes who were more likely to use PES are those who thought there were already participants doping in their sport. Similar observations are expressed by Levent, et al., (2005) where 79% of study participants claimed that their rivals were already taking drugs showing a strong motive to use banned substances

Some athletes however portrayed some inclination to doping by agreeing the statements that encourage doping. For example they agreed that only the quality of performance should matter scoring a mean of 2.58 ± 1.50 . They also indicate that health problems that arise from banned substances are just as bad as those resulting from sporting activities (mean, 2.54 ± 1.44). Agreement with these statements college athletes displayed positive attitudes to performance enhancers. Perhaps these are the same athletes who also observed that they are not worried about health risks of doping. Athletes ought to know also that some of health problems arising from the use of PES are irreversible and can lead to death. Athletes have also observed that they do not know the full effects of the substances they use Levent at al., (2005) Therefore it not just the quality of performance that matter, how an athlete improves in the game or running and throwing event is important.

It was hypothesized there would be no significant difference in attitude to doping between male and female athletes, Kenya Teachers Colleges athletes' attitude to doping and PES was not statistically significant between males and female. This may be attributed to fact that participants were drawn from the same college environment and experienced same curriculum on doping issues. College athletes get enrolled to teacher in college soon after secondary school therefore they normally have not had opportunities to interact with senior athletes competing at national and international. After all doping education is not offered to school athletes neither is it in the curriculum hence their attitude to doping may not have been influenced. Studies in other countries have however observed differences in attitude between men and women. Corbin et al., (2004) have reported male athletes (21%) with positive attitude compared to female (16%). Similarly, Peretti-watel et al., (2004) has documented significant positive attitude to PES by male athletes than female.

This study hypothesized that there would be no statistically significant difference in attitude to PES by collage athletes in relation to competition experience. Attitude to PES by Kenya colleges athletes in terms of years competition experience was not significant $p= 0.20$. This implies Kenya colleges' athletes' attitude to doping and PES was the same irrespective of the year of competition experience. These findings are in contradiction with a study by Feinberg (2009) who has reported negative attitude to doping by athletes with shorter competition experience and positive attitude by those with longer competition experience. Similarly Labre, (2002) has reported that usage of doping substances increases with increased competition experience. However Mroczkowaska (2009) reports experienced players as being more cautious on PES use and the risk they were willing to accept was significantly lower compared to athletes who had competed for few years.

Further the study hypothesized there would be no significant differences in attitudes by athletes participating in ballgames and those in track and field athletics. However findings indicate the contrary. Track and field athletes were found to have positive attitude ($p=0.01$) to PES as opposed to participants in ballgames. This may be attributed to the fact that peak performance in track and field events do not last as long as in ballgames. Therefore athletes may feel the need to maximize on what they perceive to be a short period as competitors by use of banned performance enhancers. Track and field events are individual sports and when a competitor experience a lot of pressure to win they may tempted or influenced to dope. Most of the international athletes banned for using illegal substances are normally covered by the media and this may influence the way college athletes who watch such coverage.

Athletes in ballgames work as a team and therefore feel as individuals they shielded from the pressure to win because team effort is what matters most. This understanding may prevent the players from having an inclination to PES and may not be influenced easily to dope either by the coach or the friend. Republic of Kenya, (2014) however reported to the contrary that in Kenya banned substance use is prevalent among ballgame players and mostly among soccer and rugby players. The anti-doping report further notes that Kenyan athletes are able to purchase banned substances easily from certain commercial outlets as well as from across the border. Some Kenyan players noted they would use PES if they got an opportunity and provided they were not detected. Some researchers have reported that athletes who dope with assistance of medical practitioners. Laure et al.,(2003) are likely to display positive attitude since they have the confidence that they might not be detected.

These findings may mean that track and field athletes are likely to dope more than ballgames players. Probably, these are the same athletes who would not mind to dope even though they got health problems provided they win, get a medal or recognition. Similar findings are reported by Alaranta et al., (2006) and Nowosielski & Swiatkowska (2007) where athletes in power and speed sports (such as shot put, hammer, discus, javelin and sprint events in track and field athletics) showed positive attitude to doping than in ballgames and endurance events. Positive attitude by track and field athletes may be explained by the fact that athletics competitors face stiff competition due to few slots available and due to the fact that events are also individually competed. On the contrary, team events have less pressure because winning is dependent on team-effort. On this basis Dimeo et al., (2013) reports team players having negative attitude to performance-enhancing substance use in sports.

Ballgames players have displayed varying attitude as indicated by different research findings. Feinberg (2009), findings for example indicate Irish ballgames players showing negative attitude while findings by Corbin et al., (2004) reported football players' positive attitudes to doping. These varying reports on attitudes to PES probably could be due to differences in knowledge/awareness on the drugs effect and the WADA requirements. If an athlete is not informed about the doping regulations or health risks he is likely to dope or be duped to do so by peers or by athletes' personnel.

Athletes in team sports are said to be more confident and have negative attitude to PES because winning is not viewed as an individual task but a team's effort (Dimeo et al., (2013). However athletes in team sports of soccer, basketball and volleyball have been reported to display positive attitude to alcohol use than athletes in track and field (David et al., 2005). This perhaps could have been the use of alcohol for recreation purpose by players after the game or to celebrate good performance.

Difference in attitudes may also be explained from the moral and ethical point of view of the athletes. It could be that the athletes who have displayed positive attitude do not view doping as immoral and unethical while those who see doping as unethical and immoral display negative attitude (Anshel & Roth, 2002). Similarly, Lucidi et al., (2008) explains that stronger intentions and moral disengagement by an athlete contribute to greater use of doping substances. Lubna et al., (2008) advocates that when athletes have very strong religious beliefs (moral/ethical) they are likely to keep off the drugs to improve performance.

This positive attitude has equally been reported by Lubna et al., (2008) where college students and athletes would use (positive attitude) PES if they were provided with free

drugs/substances. Feinberg (2009) further observes that an athlete who cheats would be more lenient (positive attitude) in attitude towards other athletes who cheat. It has been argued that cheaters in sports should be judged by their intentions (Feinberg, 2009) and not by the consequences of their behavior. Feinberg (2009) asserts that since athletes would not report that they have doped unless they have been caught, it would be necessary to understand attitude towards cheating in other domains in order to understand individual attitude towards doping.

In this study athletes have generally displayed a mixture of attitudes towards doping but they would be more inclined to performance enhancers.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary of the study findings, conclusions and recommendations of the study.

6.2 Summary of the Findings

The study had set out to determine college athletes' awareness, perception and attitude to doping and performance-enhancing substances in sports. It was hypothesized that there would be no significant differences in Kenya college athletes awareness, perception and attitude to doping by experience in competition, gender, type of sport and participation in various ball games. A self-report questionnaire was used to collect data from competitors in three randomly selected Coast, Central and Rift valley zones. The study sample comprised of 480 (240 males and 240 females) ball games players and 216 (108 males and 108 females) track and field athletes thus the total sample of 696 athletes. 90% were from public colleges whereas 7.6% were from private institutions.

Results of the study showed that the extent of awareness on doping by athletes did not significantly differ by gender and length of experience in competition. However, the hypothesis that extent of awareness on doping by athletes would not significantly differ by type of sport was rejected. The difference was between athletes in ball games and track events.

Secondly, there were no significant relationships of perception of doping/ PES and gender and experience in competitions. However a significant association between

perception of doping and PES and the type of sports athletes participated was established.

Thirdly, testing of null hypotheses indicated that there were no significant difference differences in attitude to doping and PES use in sports between male and female athletes, and according to length of competition experience. However there were significant differences in attitude to doping and PES amongst athletes who participated in ball games and those who competed in track and in field events

6.3 Conclusions

It was concluded that Kenya teachers colleges athlete's awareness of doping and PES use was not sufficient because some athletes were not aware of the existence of the WADC including what the code outlines. Some athletes did not know it is their responsibility to ensure they have not doped. Furthermore, athletes' responses showed that they were not fully aware of the effects of the drugs/substances. However, majority of them would like sports participants to be educated on doping and performance enhancing substance use in sports

The study concluded that some Kenya teachers colleges athletes' perception of doping is wrong while others have right perception. Some would dope if they got an opportunity and if guaranteed they won't be detected and think they would be more confident when doped. Some would care less for the health risks of doping neither would they care to lose friends on account of doping. Athletes with this kind of attitude are likely to influence drug free competitors to adopt the vice and would most likely supply drugs/PES to other athletes in future. This is a dangerous scenario since they are totally oblivious of the WADA effort in protecting the athlete and

establishing a level playing field and integrity of sport. Perceptions to doping /PES by athletes in different sports vary and this could be due to the fact that track and field athletes feel their athletic career may be short lived.

Regarding attitude to banned drugs/substances, Kenya teachers colleges male and female athletes have similar attitude to doping. This may be due to the fact that they learn and interact in the same boarding college environment where they are able to receive and exchange doping information freely. Athletes' attitudes to doping are the same regardless of the number of years they participated at the national level competition. This was also attributed to the fact that they train in the same environment. However athletes' attitudes varied when it is checked against ballgames and track and field athletics. This may be explained by the fact that ball games players feel confident in competition because of the teamwork environment hence they do not view drugs as means to make them accomplish sports competition goals. Track athletes on the other hand had seen competition as an individuals' task, may have no confidence and therefore view PES as method to take them closer to their win/medal acquisition. Track careers do not last as long ballgames careers. Thus, a track and field event participant may feel the time/age clock ticking hence the need to hasten try to achieve sporting career objectives fast. As a result of the aforementioned, Kenya colleges' athletes need to be educated on doping and PES use in sports so that their wrong perception and positive attitudes towards illegal means in sports can be changed for the better.

6.4 Recommendations for Practice

It is necessary for college athletes to be well informed of the WADA code and guidelines. This is to equip them for teaching and sports coaching at primary and

secondary schools upon graduation. College athletes should be educated on repercussions of doping so that will be better informed to advise young athletes. In collaboration with Athletics Kenya and the National Olympics committee of Kenya (NOCK) and other stakeholders, KTCSA, College administrators/ principals should organize anti-doping awareness education for the athletes via various forums such as workshops and seminars. KTCSA should collaborate with AK and embark on testing athletes for substance and drugs use during competitions at zonal and national levels.

Teaching of the doping content to trainees should be enhanced to increase college trainees' awareness, correct wrong perception and change their attitude to doping and performance-enhancing substance use in sports.

Sports governing organizations such as NOCK and AK should endorse and foster research aimed at understanding what drives athletes to use dope/ PES. Kenyan athletes who have participated and excelled in sports at local, regional and international levels and have not been incriminated in PES may be used as role models as 'clean' sports ambassadors to impress upon college athletes and other upcoming athletes on the importance of drug free sports participation.

Athletics Kenya, Football Kenya Limited (FKL), NOCK and other sports federations/associations should start anti-doping programs that comprise education and testing programs. Such anti-doping programs should be carried out at various levels, from local to national, in order to curtail the use of PES. This is by empowering athletes with information, skills and right attitudes to make responsible and healthful decisions/choices when confronted by doping issues. Drug and substance use in sports educational programmes should be closely supervised and be made mandatory by NOCK, FKL and, AK.

The number of athletes tested should be increased to include college athletes rather than the current situation where only elite athletes are tested. In addition to focusing on college athletes, resources to facilitate dope tests need be channeled to primary and secondary schools. After all athletes from schools may end up as trainees in teacher training colleges hence they should be informed on doping issues. There are many channels and media that anti-doping and anti-drugs agencies may use such as television and internet.

6.5 Recommendations for policy

It is necessary for policy organs such as NOCK, AK and MoE in collaboration to lead in the development of a comprehensive policy framework that will provide for:

- A comprehensive anti-doping strategy at primary, secondary, colleges and, national levels of competition.
- Testing of all athletes for doping and use of PES at all levels of competition, and according to WADA standards.
- Comprehensive legal deterrents for both athletes and trainers in relation to doping and banned PES should be constituted by sports federations and.
- Athletics Kenya and NOCK should set up regulations to govern how medical drugs are dispensed to athletes.

6.6 Recommendations for further research

This study only investigated the college athletes who were participating at the national ballgames and athletics competitions. There is a gap in research concerning the whole teachers' college's student population. The participants in the national competition are only a small portion, whose responses may not suffice for all students who consume

sports competitively or as a recreation. There is need to investigate awareness, perception and attitude to PES use in sport by teacher trainees in general in order to establish whether findings of this study apply to them. This may also inform wider and far reaching strategies for the whole student population.

It is necessary to establish primary and secondary schools athletes' awareness, and attitude to doping because they usually form the junior teams that represent Kenya at regional and international sports competitions. They may also have opportunities to grow in career as teachers and coaches in sports.

Other factors that may lead athletes to use performance enhancing substance to improve performance such as athletes' win orientation and competitiveness should be investigated because such factors could be the ones that eventually influences athletes perception and attitude to doping

Coaches, trainers and team managers' at the teacher-college level should be investigated for their level of doping knowledge and attitude. They play a crucial role in preparing athletes for competitions and future careers in sports.

Research should be conducted on the effectiveness of teaching doping content to establish the college lecturers' competence in imparting college trainees with knowledge and right attitudes on doping and whether the content is sufficiently addressing doping issues in teacher education curriculum.

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APPENDICES

APPENDIX A: RESEARCH AUTHORIZATION APPLICATION



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: H87/22000/2011

Date: 9th March, 2012

The Permanent Secretary,
Ministry of Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

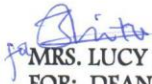
**RE: RESEARCH AUTHORIZATION FOR JANET WANJIRA KAMENJU REG.NO
H87/22000/2011**

I write to introduce Janet Wanjira Kamenju who is a Postgraduate Student of this University. She is registered for a Ph.D degree programme in the Department of Recreation Management and Exercise Sciences in the School of Applied Human Sciences.

Ms. Kamenju intends to conduct research for a Thesis Proposal entitled, "Awareness, Perception and Attitude to Doping and Performance-Enhancing Substance use amongst Athletes in Teacher Training Colleges in Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,


MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL



LNM/m

APPENDIX B: NCST RESEARCH PERMIT

PAGE 2 PAGE 3


THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Janet Kamenju Wanjira
of (Address) Kenyatta University
P.O.Box 43844-00100, Nairobi
has been permitted to conduct research in

Teacher Training Colleges	Location
Coast, Eastern and Nyanza	District Provinces


on the topic: Awareness, perception and attitude to doping and performance enhancing substance use amongst athletes in teacher training colleges in Kenya

for a period ending: 31st December, 2013.

Research Permit No. NCST/RCD/14/012/350
Date of issue 10th April 2012
Fee received KSH.2,000.




Applicant's Signature



Secretary
National Council for Science & Technology

CONDITIONS

- You must report to the District Commissioner and the District Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
- Government Officers will not be interviewed with-out prior appointment.**
- No questionnaire will be used unless it has been approved.**
- Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- You are required to submit at least two(2)/four(4) bound copies of your final report for Kenyans and non-Kenyans respectively.**
- The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**


REPUBLIC OF KENYA
RESEARCH CLEARANCE PERMIT

(CONDITIONS- see back page)

GPK6055Cmt10/2011

APPENDIX C: INFORMED CONSENT FORM

You are invited to participate in a study to examine awareness, perception and attitudes towards doping and performance-enhancing substances (PES) use in sports with collegiate athletes. I am a PhD student at Kenyatta University. I hope to investigate collegiate athlete's awareness, perception and attitudes toward PESs. You were selected as a possible participant in this study because you are a competitor in KTCSA National ballgames and athletics competitions

You are informed that participation is voluntary, without any consequence. You will be asked to fill a self-report Questionnaire which will take approximately 10 minutes to complete. Your participation and responses on the survey are both anonymous and confidential. Information gathered will be very valuable therefore you are requested to fill the whole questionnaire

If you have any questions regarding the survey I will be glad to answer them. You may contact me at the following address

Wanjira Janet Kamenju

Department of leisure, Recreation and Exercise Science

Kenyatta University

You are making a decision whether or not to participate. Your signature indicates that you have read the information provided above and have decided to participate. You may withdraw at any time. If you want a copy of this form, please let me know and one will be given to you.

Signature of the investigator _____

Date _____

Signature of Participant _____

Date _____

APPENDIX D: ATHLETES QUESTIONNAIRE

Instructions

Kindly fill the questionnaire with whatever information is required as sincerely and accurately as possible.

The information given is confidential and will not in any way be used otherwise than for this study.

Your truthful and unbiased answers will give accurate findings for the study on doping amongst amateur athletes.

Section A: Personal Data

Gender; Male Female

Age; 18-22yrs 23- 26yrs above 26yrs

Type of college: Private public

4 Sport you are now participating: ball game Track event Field event

Name of the ball game i.e. soccer_____

Tick against the national sports competitions you have participated apart from this one: **Tick as many as you have participated in;**

Primary school National ball games competition

Primary schools national athletics competition

Secondary schools national ball games competition

Secondary schools national athletics competition

6 Number of times you have competed at national level including this one.

1 year 2 years 3 years above 4years

Section B: Doping and Performance –Enhancing Substance Awareness

This section aims to gather information on awareness of doping and performance-enhancing substances among the college athletes. Kindly respond to each of the following items as it applies to you as an individual.

Kindly tick the most appropriate.

1 I am familiar with the world anti-doping code

Yes []

No []

2 I personally know athletes/players who have used performance-enhancing
Substances/drugs

Yes []

No []

3 My friends use performance enhancing-substance/drugs

Yes []

No []

4 It is the duty of an athlete/player to ensure they don't breach the anti-doping regulations

Yes []

No []

5. Athletes/players should be educated on anti doping regulations regularly.

Yes []

No []

6. Athletes should be tested for performance enhancing-substance/ drugs at all levels of competition.

Yes []

No []

7. Put a tick against the substances/drugs that can enhance sports performance.

Alcohol

Yes []

No []

Miraa

Yes []

No []

Marijuana

yes []

No []

Caffeine

Yes []

No []

Anabolic steroid Yes [] No []

Cocaine Yes [] No []

8 Am aware of the effects of the drugs/substances I have ticked in no.7 above

Yes [] No []

9 I have learnt about performance-enhancing drugs

Yes [] No []

10 Indicate where you have learnt about doping and performance-enhancing substance/drugs

Source	Yes	No
Television		
School/college		
Radio		
Newspapers		
Magazines		
Seminars		
Friends		
Parents		

11. I consider my awareness on doping and performance- enhancing substance to be adequate. Yes [] No []

Section C: Perception to Doping and Performance-Enhancing Substance

This section aims to gather information on college athletes' perception on doping and performance-enhancing substance use in sports. Kindly give information as it applies to you as an individual.

Indicate the extent of your perception on doping and performance-enhancing substance by ticking in the appropriate box.

		Agree	Disagree
a	It is easy to dope and get away with it		
b	I would dope if I got an opportunity		
c	I don't think use of performance-enhancing substance/drugs in sports has health risks		
d	I am not worried about health risks of doping		
c	I would feel guilty if I used performance-enhancing substance/drugs to perform better in my sport		
d	Discussing use of performance-enhancing substances drugs in sports would prevent doping amongst athletes.		
e	I would feel ashamed if I tested positive on a banned substance/drug in sports		
f	Doping in sports improves players' confidence		
h	My friends would not mind to use performance enhancing substances/drugs to improve their game		
i	I worry I would lose friends if I doped in sports		

Section D: Attitude to Doping

This section aims to gather information on college athletes' attitude to doping and performance-enhancing substances.

The following statements show what many people think and feel about sports and performance –enhancing substances/drugs.

Please indicate the extent to which you agree or disagree with each of the following statements by ticking the most appropriate number after each statement. The numbers stand for:

1=strongly disagree 2=Disagree 3= Neutral 4= Agree 5= strongly agree

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Use of enhancing-substance/drugs in sports is necessary to be competitive.	1	2	3	4	5
Doping is not cheating since everybody does it.	1	2	3	4	5
Athletes often lose time due to injuries and drugs can help make up the lost time.	1	2	3	4	5
Only the quality of performance should matter.	1	2	3	4	5
Athletes in my sport are pressured to take performance enhancing substances/ drugs.	1	2	3	4	5
Athletes who take Social/recreational substance/drugs use them because they help them in sports situations.	1	2	3	4	5
Athletes who take recreation substances /drugs should not feel guilty about breaking the rules and taking performance-enhancing substances/drugs.	1	2	3	4	5
The risks related to doping are exaggerated.	1	2	3	4	5
Athletes have no alternative career choices, except sport.	1	2	3	4	5
Recreational substances/drugs boost an athlete's morale to train and compete at the highest level.	1	2	3	4	5
Doping is an unavoidable part of the competitive sport.	1	2	3	4	5
Recreational substances/drugs help to overcome boredom during training.	1	2	3	4	5
There is no difference between drugs and fiberglass poles, and speedy swim suit that are all used to better performance.	1	2	3	4	5
Media should talk less about performance-enhancing substances/drugs.	1	2	3	4	5
The media exaggerates the doping issues out of proportion.	1	2	3	4	5
Health problems and injuries sustained during to training are just as bad as those incurred from doping.	1	2	3	4	5
Legalizing performance enhancements would be beneficial for sports	1	2	3	4	5

Thank you for your co-operation.

APPENDIX E: ATHLETES AWARENESS OF DOPING SCORES

					Total	
	No		Yes		Count	%
	Count	%	Count	%		
Familiar with the world anti-doping code	250	41.6	351	58.4	601	100.0
I personally know athletics/players who have used performance enhancing	412	67.1	202	32.9	614	100.0
My friends use performance enhancing-substance/drugs	537	87.3	78	12.7	615	100.0
Duty of an athlete/player to ensure they don't breach the anti-doping regulations	137	22.7	466	77.3	603	100.0
Athletes/players should be educated on anti-doping regulations regularly	21	3.4	589	96.6	610	100.0
Athletes should be tested for performance enhancing substance/drugs at all levels of competition	35	5.7	576	94.3	611	100.0

APPENDIX F: ATHLETES PERCEPTIONS OF DOPING SCORES

Perception statements	Disagree	Agree	Total
It is easy to dope and get away with it	275 (55.4%)	221 (44.6%)	496 (100%)
I would dope if I got an opportunity	466 (85.3%)	80 (14.7%)	546 (100%)
I don't think use of performance enhancing substance/drugs in sports has health risks	392 (74.4%)	135 (25.6%)	527 (100%)
I am not worried about health risks of doping	493 (89.8%)	56 (10.2%)	549 (100%)
I would feel guilty if I used performance-enhancing substance/drugs to perform better in my sport	101 (18.3%)	452 (81.7%)	553 (100%)
Discussing use of performance-enhancing substances/ drugs in sports would prevent doping amongst athletics	81 (15.4%)	446 (84.6%)	527 (100%)
Would feel ashamed if I tested positive on a banned substance/drug in sport	75 (13.3%)	490 (86.7%)	565 (100%)
Doping in sports improves players' confidence	308 (62.5%)	185 (37.5%)	493 (100%)
My friends would not mind to use PES to improve their game	262 (58.5%)	186 (41.5%)	448 (100%)
I worry I would lose friends if I doped in sports	167 (34.4%)	319 (65.6%)	486 (100%)

APPENDIX G: ATHLETE ATTITUDES TO DOPING SCORES

Attitude statements	Strongly disagree	disagree	neutral	agree	Strongly agree	total
Use of enhancing substance/drugs in sports is necessary to be competitive	431 (79.9%)	118 (19.4%)	26 (4.3%)	16 (2.6%)	17 (2.8%)	608 (100%)
Doping is not cheating since everybody does it	352 (57.4%)	170 (27.7%)	40(6.5%)	20(3.3%)	31(5.1%)	613 (100%)
Athletes often lose time due to injuries and drugs can help make up the lost time	320 (53.00%)	148 (24.5%)	50(8.3%)	46(7.6%)	40(6.6%)	604(100%)
Only the quality of performance should matter	153(100%)	116 (19.7%)	94(16.0%)	99(16.8%)	126(21.4%)	588(100%)
Athletes in my sport are pressured to take performance enhancing substances/drugs	355(59.1%)	138(23.0%)	40(6.7%)	40(6.7%)	28(4.7%)	601(100%)
Athletes use substance/drugs because they help them in sports situations	219(36.3%)	172(28.5%)	70(11.6%)	97(16.1%)	46(7.6%)	604 (100%)
Athletes who take recreation substances/drugs should not feel guilty about breaking the rules	278(45.8%)	195(32.1%)	50(8.2%)	48(7.9%)	36(5.9%)	607(100%)
The risks related to doping are exaggerated	203(33.4%)	191(31.5%)	91(15.0%)	79(13.0%)	43(7.1%)	607(100%)
Athletes have no alternative career choices, except sport	324(53.3%)	183(30.1%)	35(5.8%)	32(5.3%)	34(5.6%)	608(100%)
Recreational substances/drugs boost an athlete's morale to train and compete at the highest level	230(37.8%)	170(27.9%)	63(10.3%)	82(13.5%)	64(10.5%)	609(100%)
Doping is an unavoidable part of the competitive sport	336(54.7%)	166(27.0%)	43(7.0%)	33(5.4%)	36(5.9%)	614(100%)
Recreational substances/drugs help to overcome boredom during training	299(49.6%)	180(29.9%)	51(8.5%)	38(6.3%)	35(5.8%)	603(100%)
No difference between drugs and fibre glass poles & speedy swim suit that are all used to better performance	210(35.4%)	181(30.5%)	132(22.2%)	42(7.1%)	29(4.9%)	594(100%)
Media should talk less about performance-enhancing substance/drugs	312(52.8%)	157(26.6%)	40(6.8%)	41(6.9%)	41(6.9%)	591(100%)
The media exaggerates the doping issues out of proportion	240(39.9%)	172(28.6%)	77(12.8%)	66(11.0%)	46 (7.7%)	601(100%)
Health problems and injuries sustained during training are just as bad as those incurred from doping	191(31.8%)	160(26.6%)	76(12.6%)	83(13.8%)	91(15.1%)	601(100%)
Legalizing performance enhancements/drugs would be beneficial for sports	360(59.8%)	118(19.6%)	50(8.3%)	27 (4.5%)	47(7.8%)	602(100%)