

Knowledge On Doping Among Secondary School Sports and Games in Kenya.

BONFACE KIMATHI GICHUNGER¹, DR. JONATHAN ROTICH², DR. VINCENT MUASYA³

¹*Students Welfare, Tharaka University*

^{2,3}*Recreation and Sports Management Kenyatta University,*

Abstract- Sports and games teachers play a key role as athlete support personnel (ASP) in the lives of athletes in secondary schools. They play the roles of coaches, trainers, team managers, first aiders and counsellors to the student's athletes. Therefore, it is the duty of the sports and games teachers to guarantee that student athletes participate in fair competition and clean sports. This study assessed the knowledge of sports and games teachers on doping. The study objective assessed the knowledge that sports and game teachers have about doping laws and regulations. Additionally, it investigated whether the knowledge, of sports and games teachers differed depending on gender and experience. A cross-sectional survey design was used for the study. The 256 sports and games teachers who competed in Kenya under the auspices of KSSSA were the target population. Through systematic random sampling 176 secondary school sports and games teachers took part in the study. An online questionnaire based on the WADA social sciences package was used to collect data. The SPSS data analysis process employed descriptive statistics, including means, percentages, and standard deviations. To determine if there was a significant difference in the knowledge of sports and games teachers based on gender and experience, the Mann-Whitney U test and Krustal Wallis H test were utilized. The study revealed encouraging levels of general knowledge with the main sources for anti-doping information for sports and games teachers in Kenya being the WADA website 38.4% followed by television at 36.2%. However, there was no statistically significant differences in anti-doping knowledge, attitude or beliefs based on gender or years of coaching experience.

I. INTRODUCTION

Young Kenyan athletes have shown exceptional performance in various sports, including middle- and long-distance races, football, rugby, and volleyball, at multiple competitive levels (Rintaugu & Mwangi, 2021). These athletes are typically developed through structured training from primary school to college

level (KSSSA, 2019). However, this excellence has been shadowed by doping controversies, with a WADA report revealing that 138 Kenyan athletes tested positive for banned substances. The World Anti-Doping Code (WADC) mandates that athlete support personnel understand and adhere to anti-doping regulations (WADA, 2018; WADC, 2015: 4). Coaches, identified as key providers of anti-doping information by Backhouse et al. (2012), are expected to maintain ethical attitudes and role model behavior (Fung & Young, 2006). The WADC outlines the responsibilities of athlete support personnel (ASP) to promote anti-doping standards, with severe penalties for breaches. Despite their influential position, limited research has been conducted on secondary school sports and games teachers' knowledge, regarding doping (Ogama & Were, 2019). Given their involvement in nurturing athletes, their perspectives significantly shape athlete behavior and thoughts. The study aimed to evaluate the knowledge, of Kenyan sports and games teachers toward doping and how demographic factors affect these perceptions.

II. LITERATURE REVIEW

Introduction.

Using drugs or other methods to improve athletic performance is known as doping, which is against the WADA Code and violates the values of sportsmanship and fairness (Murray, 2018; Pitsch et al., 2007). Greek and Roman athletes used stimulants, according to historical accounts (Petroczi & Aidman, 2009; Wadler & Hainline, 1989). Athletes used stimulants like cocaine and strychnine to improve their performance in the 19th and 20th centuries (Neil, 2016). The risks associated with doping are highlighted by tragic events such as Thomas Hicks' death during the 1904 Olympics (Neil, 2016). The

dangers of performance-enhancing substances were also made clear by the death of cyclist Knud Enemark Jensen in 1960 (Chesnow, 2016).

Ngugi, a cross-country champion, started Kenya's history of doping, and athletes like Pamela Chepchumba and David Munyasia were banned for drug offenses (WADA report, 2018). The Athletics Integrity Unit (AIU) classified Kenya as having a high doping risk, which is shown in the large number of athletes that tested positive for substances. Kenyan athletes are subject to strict testing procedures because of the high incidence of doping, underscoring the ongoing problem of doping in sports (WADA report, 2018; AIU).

Athlete Support Personnel and Doping.

Support from parents, coaches, doctors, and other medical experts is crucial to athletes' compliance with clean sports commitments. Despite evidence that athletes' social networks have a substantial impact on their welfare and sports integrity, efforts to combat doping have mostly targeted athletes (Laurie et al., 2022). The World Anti-Doping Code (WADC) seeks to safeguard athletes' rights to participate in drug-free sports and to guarantee unified anti-doping efforts worldwide (WADA, 2021). The 2021 code acknowledges the impact of athlete support staff (ASP) on athletes' choices on performance-enhancing drugs and strengthens their role in anti-doping initiatives (Mazanov & Huybers, 2010; Smith & Stewart, 2008). ASPs who break anti-doping regulations face severe penalties, including lifelong bans, per Articles 2.4–2.9 of the WADC (WADA, 2021).

The WADC describes ASP's responsibilities to identify and implement anti-doping measures, support athlete testing, and encourage athletes to abstain from doping (WADA, 2021). ASP education is essential to encouraging drug-free sports and avoiding penalties because ignorance is not a defense under current stringent liability regulations (Amos & Fridman, 2012). Research suggests that in order to carry out their WADC duties, coaches and sports doctors may require additional training and expertise (Backhouse & McKenna, 2011, 2012).

Sports and games Teachers as Athlete Support Personnel.

Since schools are the primary setting for young people's early participation in organized sports, the educational system is essential to the growth of top sports. Kenya's domination in international sports is largely due to the critical role secondary school coaches play in identifying talent. Teachers of sports and games at the secondary school level are crucial members of Kenya's athlete support personnel (ASP), as the majority of great athletes find their abilities through them. Parents, trainers, and paramedics are additional ASP members for young players. All ASP members are required by the WADC to be knowledgeable about pertinent legislation and to use their influence to encourage an anti-doping mindset (Neil, 2016). Understanding Kenyan sports and games teachers' knowledge about doping is crucial.

Sports and Games Teachers' Knowledge on Doping.

As members of the athlete support staff (ASP), sports and games teachers are vital in helping young athletes comprehend and follow anti-doping laws, which has a big impact on their development. Coaches are crucial for disseminating information about doping, and their expertise can discourage athletes from participating in doping activities. However, research shows that a lot of trainers don't know enough about banned substances and techniques. For example, Terry and Stephen (2015) found that coaches had little knowledge of doping methods, and Peters et al. (2009) found that although 25% of athletes ask their coaches for doping advice, 75% of coaches felt uninformed, and two-thirds wanted more detailed information. Many ASP members were found to be ignorant of WADA's list of prohibited chemicals, Therapeutic Use Exemptions (TUEs), and testing protocols (Bhagirathi, 2009).

Many Kenyan athletes utilize nutritional supplements, recreational medications, and herbal treatments without realizing the dangers of doping, according to research (Kimiye & Simiyu, 2009; Otieno & Offula, 2009). Concerns regarding coaches' acquaintance with recreational drugs and supplements and their possible doping implications are raised by their widespread use. Sports and games teachers in Kenya must be well-versed in anti-doping

regulations in order to properly mentor young athletes, given their position in players' education and training. This emphasizes how crucial it is to research sports and games teachers' knowledge on doping.

III. METHODS

Research Design

The survey design chosen for this study was cross-sectional. This approach enabled the researcher to gather information from numerous subjects concurrently (Kothari, 2004). It was suitable because it allows for the collection of data from a broad population without manipulating any of the variables being investigated at a specific moment in time. This facilitates the estimation of the prevalence of the desired outcome, as the sample is typically drawn from the entire population (Andrew et al., 2019).

Measurement of Variables

The sports and games teachers' knowledge was the dependent variable and was measured at interval level. The gender and experience of the sports and games teachers were the independent variables. Experience was assessed at the ordinal level while gender was measured at the nominal level.

Study location

The research was conducted online using e-forms in the year 2025. This involved the sports and games teachers in the eight KSSSA regions, namely Central, Coast, Eastern, Nairobi, North Eastern, Nyanza, and Western regions, collectively representing the entire nation.

Target Population

This study focused on sports and games teachers from the eight regions participating in the 2025 KSSSA championships. These championships featured various sports including athletics, basketball 3x3 and 5x5, cross-country, football, handball, hockey, netball, rugby 7s and 15's, table tennis, tennis, badminton and volleyball. Each of the eight KSSSA regions nominated 15 sports and games teachers to oversee teams from their respective regions. In total, there were 256 sports and games teachers participating in the term one and term two KSSSA national competitions.

Sample Size and Sampling Technique

The study employed stratified and random sampling techniques. According to KSSSA (2019), approximately 256 sports and games teachers take part in term one and term two KSSSA championships in various games categories each year at the national level of the competitions. Using Israel's (2009) sampling table, the sample size was established. The table was produced using a formula by Yamane (1967), which establishes a p value of 0.5, a confidence level of 95%, and precision levels of $\pm 5\%$, $\pm 7\%$, and $\pm 10\%$ (Anokye, 2020)

As recommended by Israel (2009), the sample was boosted by an extra 10% to account for non-response. As a result, the sample size was 172.

Data collection Procedure

Data collection was scheduled for April 2025 and August 2025 during the KSSSA national championships. Permission to access the participants' contacts was sought from the KSSSA planners. Majority of the participants were reached physically and the QR code to the online questionnaire shared with them. The link to the questionnaire was also shared through email. The questionnaire was distributed online on the regional coaches' forums. Participants accepted or rejected to participate at their own will. The researcher was monitoring the response rate online and downloaded them after specific period like 1 day to ensure appropriate response rate which was to be over 50%.

IV. FINDINGS

Introduction.

The study's sample size comprised of 172 sports and games teachers in Kenya who coach different sports in the secondary schools. Out of the 172 questionnaires issued, 138 were filled out and returned to the researcher resulting in an 80.2% response rate which was established sufficient considering a survey response rate of 50% and above is deemed good in many circumstances. Therefore, the 80.2% rate of response in this study was deemed sufficient for analysis, drawing conclusions, and reporting.

Demographic Information of Participants.

The respondents were requested to indicate their gender, sport they coach in secondary school, the region and county of their schools and years they have been sports and games teachers.

A total of 138 respondents participated in the study. The gender distribution revealed a notable predominance of male coaches ($n = 116$, 84.1%), with female coaches constituting only 15.9% ($n = 22$). This imbalance suggests that coaching at this level remains a male-dominated profession, potentially reflecting broader gender disparities in sports leadership roles.

Regarding years of coaching experience, the largest segment of respondents ($n = 55$, 39.9%) had 10–14 years of experience, followed by 34.8% ($n = 48$) with 5–9 years. A smaller proportion (16.7%, $n = 23$) were relatively new coaches with 0–4 years of experience. Only 7.2% ($n = 10$) had 15–19 years, and a minimal 1.4% ($n = 2$) reported 20 or more years in the field. This distribution indicates that the coaching workforce is largely composed of mid-career professionals, with a smaller pool of highly experienced veterans.

In relation to the sport coached, Basketball 3×3 emerged as the most frequently reported discipline ($n = 20$, 14.5%), followed closely by Basketball 5×5 ($n = 17$, 12.3%) and Tennis ($n = 15$, 10.9%). Football and Badminton each accounted for 10.1% ($n = 14$), while Rugby 7's represented 8.0% ($n = 11$). Other sports, including Handball, Hockey, Netball, and Volleyball, each recorded participation levels below 7%. The relatively high representation of basketball variants, alongside traditionally popular sports such as football and tennis, may reflect shifting trends in sports participation and institutional investment in specific disciplines.

The regional distribution of respondents was relatively balanced, with Eastern, Rift Valley, Nairobi, and Nyanza each contributing 13.0% ($n = 18$) of the sample. The Coast and Western regions each accounted for 12.3% ($n = 17$), while North Eastern and Central regions each represented 11.6% ($n = 16$). This even distribution suggests that the

sample captured perspectives from across the country, reducing the likelihood of regional bias in the findings.

Knowledge of doping rules and regulations among sports and games teachers in Kenya.

The study sought to establish knowledge of doping rules and regulations among sports and games teachers in Kenya. Most respondents demonstrated a high level of knowledge regarding the World Anti-Doping Agency (WADA) Code. A large majority (92.0%) correctly recognized WADA's mission as preventing deliberate and inadvertent violations of anti-doping regulations through knowledge creation, communication, and the development of life skills and decision-making abilities. Similarly, 91.3% were aware that WADA aims to deter doping by establishing strong rules and sanctions that are understood by all stakeholders. Knowledge of WADA's role in maintaining an effective testing and investigation system was also high at 89.9%. However, fewer respondents (75.4%) correctly identified that WADA is responsible for adjudicating and imposing sanctions on rule violators, and only 73.2% knew that the agency is tasked with upholding the principles of proportionality and human rights. These findings suggest that while the general mission and deterrence strategies of WADA are widely understood, knowledge of its adjudicatory role and human rights mandate is less well established.

In relation to prohibited materials and practices, 80.4% of respondents correctly understood the purpose of Therapeutic Use Exemptions (TUEs), and 62.3% knew that an athlete prescribed a prohibited drug may apply for a TUE. However, there was considerable uncertainty regarding the safety of prescription drugs purchased abroad, with only 37.7% correctly identifying the risks, while 34.1% were incorrect and 28.3% unsure. Knowledge of the principle that athletes are solely responsible for the substances they consume was high at 87.7%. Nonetheless, knowledge of specific banned substances was inconsistent; only half (50.7%) correctly stated that caffeine was not on the 2009 prohibited list, with one-third unsure. These results suggest that while coaches' responsibility is well understood, there are notable gaps in more detailed or

situational knowledge, particularly regarding TUE application and the legality of medications obtained outside Kenya.

When asked about testing procedures, some misconceptions emerged. About 44.2% incorrectly believed athletes could refuse testing if the timing was inconvenient. Nevertheless, 76.8% correctly knew that athletes must remain with the doping control officer after being informed of testing, and 71.0% recognized that athletes' names should not appear on laboratory forms for security purposes. Knowledge of testing methods was less robust, as only 42.0% correctly stated that urine testing typically outperforms blood testing, and over a quarter (27.5%) were unsure. These findings indicate moderate understanding of procedural compliance, but also highlight the persistence of misunderstandings about refusal rights and the relative efficiency of different testing methods.

Regarding athlete rights and responsibilities, fewer than half of the respondents (42.8%) correctly identified that athletes are allowed to bring a representative during doping control, while 56.5% knew that the sample collector should be of the same sex as the athlete. By contrast, there was strong knowledge (87.7%) that athletes must always be ready for testing. This suggests that while readiness for testing is well understood, procedural rights during sample collection remain an area of confusion. In terms of supplement use, the majority (87.0%) knew that Athletics Kenya can advise athletes on safe supplement use, and 88.4% understood that athletes risk sanctions if they consume a contaminated supplement, even if they believed it to be safe. However, only 43.5% rejected the misconception that all over-the-counter supplements are safe, and 56.5% incorrectly believed that labels always disclose the presence of illegal substances. These findings reveal strong knowledge of the sanction risks associated with supplement use, but also significant misconceptions about label accuracy and inherent supplement safety.

Source of anti-doping information among sports and games teachers in Kenya.

The most common source of anti-doping information among respondents was the World Anti-Doping Agency (WADA) website (38.4%, $n = 53$), closely followed by television (36.2%, $n = 50$). Other notable sources included international sports federations' websites (31.2%, $n = 43$), drug control bodies such as NACADA (29.0%, $n = 40$), and daily newspapers (28.3%, $n = 39$). Less frequently cited sources included seminars and conferences (18.8%, $n = 26$) and sports, fitness and nutrition magazines (14.5%, $n = 20$).

Gender Differences in Anti-Doping Knowledge, Attitudes, and Beliefs

The Mann–Whitney U test results showed no statistically significant gender differences in anti-doping knowledge among the coaches surveyed and therefore failed to reject the null hypothesis that there is no significant difference in the knowledge regarding doping among teachers of sports and games based on their gender.

Female coaches (Mean Rank = 76.34, $n = 22$) scored slightly higher than male coaches (Mean Rank = 68.20, $n = 116$) in anti-doping knowledge, $U = 1125.50$, $Z = -0.877$, $p = 0.381$. These findings suggest that gender is not a determining factor in shaping anti-doping knowledge among the respondents.

1.1 Coaching Experience Differences in Anti-Doping Knowledge.

In establishing the potential significance differences in sports and games teacher anti-doping knowledge based on Coaching Experience the Kruskal–Wallis H test, was employed. The Kruskal–Wallis H test revealed no statistically significant differences in anti-doping knowledge across the various coaching experience groups and therefore failed to reject null hypothesis there is no significant difference in the knowledge regarding doping among teachers of sports and games based on their experience.

For anti-doping knowledge, coaches with 15–19 years of experience had the highest mean rank

(78.05), followed by those with 10–14 years (73.16) and 5–9 years (67.88), while the lowest mean rank was recorded among coaches with 20 years and above (40.00), $H(4) = 2.708$, $p = 0.608$. These findings suggest that years of coaching experience did not significantly influence anti-doping knowledge.

V. CONCLUSIONS OF THE STUDY.

Based on the findings of the study, the following conclusions are drawn.

The study established that sports and games teachers in Kenya primarily access anti-doping information through mass media and web-based platforms, particularly the WADA website and television.

Teachers demonstrated encouraging levels of general knowledge of anti-doping issues, including WADA's mission and the principles of strict liability.

The study found no statistically significant differences in anti-doping knowledge, attitudes, or beliefs based on gender or years of coaching experience.

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