

Understanding the context of anti-doping in Africa:

A communication approach to the “dopogenic” environment

By

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DEDICATION

I dedicate this thesis to my daughter, Emmanuelle Akuba Kwaw. I also dedicate this research paper to the unknown athlete who may have unknowingly/unintentionally doped and suffered the consequences of the actions of others.

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ABSTRACT

Anti-doping communication is crucial to fighting doping by athletes and sportspersons and the widespread doping practices enabled by sports bodies and other institutions. There is therefore growing interest in anti-doping communication and the doping milieu. Additionally, there is a paucity of anti-doping research in Africa. The present study explores anti-doping communication and the broader context of anti-doping in Africa. The study is anchored in the Socio-Ecological Model and the concept of the “dopogenic environment”. A qualitative exploratory approach was used. Data were collected using individual in-depth interviews. Participants ($N = 18$) were 12 African national anti-doping officers (males: $n = 9$), and six athletes (males: $n = 1$) recruited via convenience sampling and interviewed at the 2023 African Games in Accra, Ghana. Data were analyzed using thematic analysis. Findings show that anti-doping communication and Africa’s anti-doping environment are affected by four key factors: personal (access to education and information, low technology use, and language barrier), social (social support and influencers such as coaches), institutional (mistrust among sports institutions, lack of coordination, and limited/event-based communication), and public policy (lack of knowledge awareness, funding, historical colonial legacies and socio-economic context). In conclusion, anti-doping communication in Africa should embrace a multifaceted and comprehensive strategy that fosters cohesive and integrative communication among all stakeholders ranging from policymakers and institutions to social groups and individual athletes.

Keywords: Africa, anti-doping, communication, doping, dopogenic environment.

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CHAPTER 1: INTRODUCTION

Scholars have long been interested in anti-doping communication and the broader context of anti-doping in Africa (Ndasauka & Makwinja, 2024; Ruwuya et al., 2022). Doping refers to the use of prohibited performance-enhancing substances (PES) or methods in sports as prescribed by the World Anti-Doping Agency (WADA) with the intent to gain an advantage over others (Chan et al., 2016). On the other hand, anti-doping refers to a prohibitive set of practices and methods aimed at ensuring clean sport and a level playing ground for all athletes (Keyser et al., 2007), backed by strict adherence to WADA's anti-doping code. In this study, communication refers to policy documents, reports from the WADA, communication technologies, electronic communication, and health communication.

Doping can severely affect the reputations, status, and health of individual athletes, the sport's governing bodies, corporate organizations, and nation-states (Hochstetler, 2010). The latter phenomenon is evidenced by the suspensions and life bans handed over to culprits over the years by the WADA and affiliate bodies (Holt et al., 2009). For instance, a British Broadcasting Corporation (BBC) investigation into the infamous East Germany doping scandal asserts that "hundreds (of athletes) were left with long-term health problems, the result, almost certainly, of the drugs they were given throughout their athletic careers" (Allden, 2009, para.1).

Despite the adverse effects of the doping, there appears limited information on the literature regarding an effective anti-doping communication program in the East German doping scandal where athletes, including minnows, were injected with steroids in an atmosphere of fear and secrecy (Allden, 2009; Hoberman, 1992; Holt et al., 2009). Perhaps some athletes did not probably know what they were doing, as evidenced by athlete interviews with the British Broadcasting Corporation's (BBC) documentary team. The same could apply to other state-sponsored doping programs, such as the Russian doping episode of

2016 where hundreds of Russian athletes claimed their innocence and lodged appeals at the International Court of Arbitration (Duval (2015)).

The literature shows that nation-states did not provide education and information to athletes during the Cold War era when there was much emphasis on using sports to demonstrate superior ideologies, sometimes at a significant cost to the health of athletes. The lack of anti-doping information raises the question of what the affected athletes could have done if they had had prior education and information about the side effects and long-term impact of the drugs they were ingesting. In contemporary times, sports organizations like the International Olympic Committee (IOC) and WADA are investing time and resources to provide as much education, information, and knowledge about anti-doping communication, and enhancing research and testing procedures (WADA, 2022).

Doping is a very contentious issue in sports, which sometimes results in the politicization of doping and further resulting in geopolitical wars, as witnessed at the Paris 2024 Olympic Games, where the United States of America's Anti-Doping Agency (USADA) became embroiled in a public spat with WADA over the latter's controversial decision to allow some Chinese athletes found to have doped to compete at the Olympics (WADA, 2024). A WADA statement explained that at the center of the dispute is the contentious matter of unintentional doping, which involves athletes ingesting contaminated products. Generally, unintentional doping refers to positive doping violations arising from supplements either not listed on WADA's prohibited list or higher volumes of the latter supplements. However, WADA's strict liability policy makes athletes responsible for whatever they ingest.

Therefore, there appears to be a thin line between intentional and unintentional doping, and individual athletes who may otherwise have been innocent can be caught in between, possibly due to inefficient knowledge of supplements and/or poor labeling of medical products. The launch of the controversial enhanced games, better known as the doped games,

in 2024 by Aron D'Souza highlights the growing mistrust of the worldwide anti-doping scheme (Henson, 2024). The core objective of the doped games is to provide a platform for athletes to dope amid a zero-doping testing regime.

WADA recognizes the importance of an effective anti-doping communication program in fostering individual athletes' behavior on the use or non-use of performance-enhancing drugs. WADA periodically publishes and updates a list of banned substances on its website and provides updates on the status of its members and all signatories to the WADA Code. For instance, WADA President Witold Bańka met representatives of 12 African nations, including Ghana's Minister of Youth and Sports, in February 2024 and discussed the importance of anti-doping programs, increased funding for anti-doping and ensuring athletes remain as the central focus of the anti-doping effort on the African continent (WADA, 2024). WADA's goal of providing education and policy guidelines to its members, such as the engagement with the political heads of sports ministries in Africa, can be considered as an attempt to build trust in the anti-doping effort by ensuring an effective communication process that involves policy makers to address concerns about perceived lack of anti-doping structures on the continent.

Fifty-two African nations, including Ghana, have ratified the International Convention Against Doping in Sports, which aims to prevent and eliminate doping in sports since the United Nations Education Science and Cultural Organization (UNESCO) adopted it in 2005 (WADA, 2024). Thus, Africa appears to present a unique case for the worldwide anti-doping effort, considering its unique challenges in anti-doping against the background of the World Anti-Doping Agency policy and practice (Ndasauka & Makwinja, 2024).

The author's experience as an academic and sports administrator for over 20 years triggered his curiosity to uncover whether there is such a communication gap, especially for athletes from the Global South. The author aims to address issues of communication's

effectiveness and framing via existing sports structures, which directly affect athletes' behavior. As Press Attaché for Team Ghana at the London 2012 Olympic Games, the author learned about the consequences of a lack of effective athlete-health communication and its implications on athlete behavior. For example, at the London 2012 Olympics, a Ghanaian boxer who was the nation's flag bearer and participated in the opening ceremony was withdrawn when officials detected he had an unhealed jaw injury sustained months before the London Games (Foxsports, 2023). This was a severe case because the said boxer risked his health by training at a pre-games boxing camp in Glasgow, Scotland, weeks before the Games.

The boxer's attitude could demonstrate many things. For example, is it a question of a lack of channel of internal communication between the athlete, the medical team, and the Ghana Boxing Federation despite a late decision to withdraw the boxer from the event? As Press Attaché at the time, the author was called upon to draft a press release announcing the unpleasant news of the withdrawal of our flag bearer. The news was met with a heavy public backlash from the media and sports fans who accused the Ghana Olympic Committee (GOC) of incompetence and risking the life of an injured athlete. Subsequently, the Ghana Olympic Committee made its qualified athletes undertake a robust health screening exercise at a renowned private hospital in Accra, Ghana, the Nyaho Medical Clinic, before the Rio 2016 Olympic Games. Thus, the author's experiences him to understand that effective communication channels are essential in creating a conducive environment to impact athlete behavior successfully.

A decade after London 2012, Ghana was rocked with a rare case of a doping scandal involving one of its brightest young boxers, Shakul Samed. Samed was initially suspended by the Commonwealth Games Federation (CGF) at the Birmingham 2022 Commonwealth Games for what appeared to be inadvertent doping (Commonwealth Sport, 2023). According

to the CGF, a sample from the athlete returned adverse findings for Furosemide, a diuretic and masking agent. As a masking agent, the latter drug can hide the presence of performance-enhancing drugs in a body, and the drug is listed on the World Anti-Doping Agency's (WADA) list of prohibited substances. The athlete admitted in an interview to not knowing the fact that the drug was on the banned list. He said he was ill at the time and had asked for a prescription from a pharmacist before being administered the said drug.

Similar to the London 2012 controversy involving the Ghanaian flagbearer, the incident raised eyebrows, with many asking why the medical team had not detected this anomaly before the team went to the Commonwealth Games in the first place. Subsequently, the head coach of the national boxing team, Ofori Asare, stated on Ghana Television that he did not know how the boxer acquired the drug. However, Shakul Samed did not indicate whether he had spoken to a doping officer or a doctor from the boxing federation before taking the prohibited substance. According to the International Boxing Association (IBA), Shakul Samed was handed a three-year ban in July 2023, having already served a year's suspension from amateur boxing after the 2022 Commonwealth Games. He cut short his blossoming amateur career and turned to the professional boxing ranks in 2024.

Samed's case appears unique and is one of the most high-profile cases of a Ghanaian athlete publicly embroiled in a doping violation at the highest level of sports in recent times. However, there are other notable examples of this phenomenon in Africa. Nigeria's female boxing sensation Cynthia Ogunsemilore was suspended from the Paris 2024 Olympics after returning adverse findings for using Furosemide in a pre-event test conducted by the International Testing Agency (BBC, 2024). Cynthia's dream of competing on the biggest stage in sport came crashing down, having won a bronze medal at the Birmingham 2022 Commonwealth Games and a gold medal at the African Games in Accra, 2023. However, the use of the drug Lasix/furosemide as a weight loss measure has attracted worldwide attention.

The fact that Ghana's Shakul Samed and Nigeria's Cynthia Ogunsemilore were caught using the drug raises further eyebrows.

Elsewhere, the Namibian duo of Beatrice Masilingi and Christine Mboma were controversially banned from competing in athletics by World Athletics (WA) because their natural bodies produce higher levels of testosterone that exceeds the legally permitted by WA (Granville, 2021). The Namibian duo received the news of their bans while on international travel. In addition, Liberian female footballer Margaret Steward was handed an initial two-year ban and later reduced to 1-year on appeal for testing positive for a banned substance (Walker, 2023). The doctor who administered the drug was banned for four years (Walker, 2023).

Another high-profile case in point is a Liberian para powerlifter, James Siaffa, who was handed a reduced sentence of a 3-month suspension by the International Paralympic Committee (IPC) in 2012 after he was found to have taken a prohibited substance on WADA's list (IPC, 2012). According to the IPC, Siaffa's urine sample returned an adverse finding showing the presence of Prednisone and its metabolite Prednisolone at the 2012 FAZZA International Powerlifting Competition (IPC, 2012). The IPC's anti-doping panel tagged Siaffa's case as "unique" because the powerlifter had revealed details of his drug administration to doping officers and had indicated on his doping control form that he had taken a pain killer in his home country before the event. He argued that he took the painkiller on the advice of a pharmacist who had assured him it was not on WADA's prohibited list. The pharmacist indicated he had prescribed the medicine to the powerlifter for therapeutic use only after a shoulder dislocation. Given the weight of the evidence, the IPC decided to hand Siaffa a three-month reduced sentence from what would have been a mandatory 2-year ban and a fine of €1,500. The above cases of Ghana's Samed, Liberian Siaffa, and others raise critical red flags on doping and anti-doping communication in the context of Africa.

Based on the above, scholars have noted that African countries face peculiar structural challenges in setting up and funding national anti-doping agencies (NADOs) and executing the World Anti-Doping Agency's (WADA) global anti-doping policies (Adu 2023; Ruwuya et al., 2022; Sagoe et al., 2015). Ruwuya et al. (2022) explain that, historically, Africa was not part of the meeting that birthed the World Anti-Doping Agency in 1999 following the Festina Cycling doping scandal at the Tour de France in 1998.

Moreover, Lapouble (2024) argues that the socio-economic context of African countries negatively impacts the capacity of African countries to apply the WADA code on anti-doping effectively. He adds that only a few African countries can fully apply WADA's program. Lapouble argues that most African countries do not consider anti-doping a top public policy because of overbearing developmental issues such as public administration, corruption, public health, and the structuring of sports organizations. The United Nations Educational, Scientific and Cultural Organization (UNESCO) estimates that African countries use about 0.5 percent of their Gross Domestic Product on sports compared to the world average of 2.0 (UNESCO, 2018). Thus, it would have been important to consider the African socio-economic context in the initial drafting of the WADA anti-doping policy. Yet, African countries are required to abide by and implement all regulations contained in the WADA code.

The study is situated in the context of the available literature, which suggests that anti-doping communication research is rare in Africa. The paucity of literature on anti-doping in Africa supports previous research that African anti-doping studies tend to be dominated by Western views because recommendations and regulations by the World Anti-Doping Agency tend to enforce Western hegemony (Ruwuya et al., 2022). Making it difficult to admit that a one-size-fits-all solution to anti-doping may not be suitable for every region worldwide. Therefore, a knowledge gap has been created in the literature on the African context of anti-

doping communication. The research aims to provide insight into the special case of Africa by engaging with the "dopogenic environment" concept (Backhouse et al., 2017) and the socio-ecological model (Bronfenbrenner, 1979) to understand how structural and environmental factors can influence athletes' doping motives.

The "dopogenic environment" is defined by Blackhouse, Griffiths, and McKenna (2017, p. 2) to refer to "the sum of influences produced by the surroundings, opportunities and conditions that promote anti-doping rule violations (ADRVs). Local-level factors (e.g., team, sports clubs, home, neighborhood, school) work alongside structural factors (e.g., education systems, national and international sports organizations, health systems, government policies, and societal attitudes and beliefs) to create the 'dopogenic' milieu. Several factors mediate the how and why of doping practices within the broad set of criteria. An important factor could be a lack of effective anti-doping communication with athletes, considering their peculiar challenges. Again, there is little or no literature on how athlete interactions with relevant influencers such as family, social circles, formal institutions, and mass media affect athletes' overall anti-doping communication discourse in Africa contrary to the socio-ecological model and other empirical case studies (Bronfenbrenner, 1979; Dimeo et al., 2012).

While the literature on anti-doping communication abounds in Western countries (e.g., Martinelli et al., 2023; Naughton et al., 2024; Qvarfordt et al., 2021; Read et al., 2024), there is rare literature on the effect of anti-doping communication on athletes in Africa.

1.1 Study purpose, objectives and questions

The present study explores anti-doping communication and the broader context of anti-doping in Africa. To this end, the present thesis is guided by the following research questions:

1. What factors affect anti-doping communication's effectiveness and framing via existing sports structures in Africa?
2. How do athletes use communication technologies to improve their health outcomes?

3. How is anti-doping communication being implemented in Africa?

CHAPTER 2: BACKGROUND, CONTEXT, AND LITERATURE REVIEW

2.1 The history of doping in sports

Buckley et al. (1988) suggest that the word doping originates from South Africa, where locals used a local liquor known as dop to stimulate. However, others claim the word originates from the American expression dope, a word commonly used to refer to opium (Buckley et al., 1988). The history of doping in sports can be traced back to the Ancient Olympics in 668 BC, when athletes used figs to improve performance in the Olympics (Holt et al., 2009). Athletes used plants and alcoholic content to mask pain or improve speed and endurance in athletes.

Holt et al. (2009) observe that the winner of a marathon in 1904, Thomas Hicks, consistently took strychnine and brandy during the race. Dimeo et al. (2011) note that matters came to a head at the Rome 1960 Olympics following the death of a young Danish cyclist, Knud Enemark Jensen, which led to speculations that the deceased had died after a dosage of amphetamines. The study observes that the mass media played an essential role in raising suspicions about what killed Knud Anemark and, in the process, highlighted the dangers of doping to the public (Dimeo et al. (2011). At this point, the International Olympic Committee, President Avery Brundage, appointed a medical expert, Arthur Porritt, to investigate the issue and make suggestions for the IOC's policy response to the scandal.

Further, research reveals that steroids have always been available for athletes, but it was not until the 1964 Olympics that "performance-enhancing drugs became openly available to athletes" (Dimeo et al., 2011, p. 228). Cold War rivals, the USSR and the USA, had athletes who were actively using steroids to outdo each other in sports as part of their bitter war over their ideological differences.

The former German Democratic Republic (GDR), also known as East Germany, presents a fascinating case regarding the earliest forms of a systematic state-controlled doping

program that curtailed athlete liberties and the right to know more about doping (Dimeo et al., 2011). In the 1990s, research identified that athletes from East Germany were systematically doped to enhance their performance at competitions, resulting in their dominance in sport (Hoberman, 1992). East German athletes ingested anabolic steroids to enhance their performance (Hoberman, 1992). Hoberman argues that the program succeeded in part because it was shrouded in secrecy, and the GDR did not inform the individual athletes about the dangerous effects of the drugs and medications they were administered. Birgit Boese, who joined the GDR program as an 11-year-old athlete, subsequently suffered from multiple physical problems afterward (Allden, 2009). The BBC report states that "hundreds have been left with long-term health problems, the result, almost certainly, of the drugs they took throughout their athletic careers" (Allden, 2009, p. 1).

Further, Dimeo et al. (2011) argue that doping was a central theme of the GDR's national policy for sports, known as the State Plan 14.25, in the mid-1960s until the collapse of the GDR in November 1989. Indeed, the available records reveal that the East German Police, known as the Stasi, played an extensive role in the program. The program employed as many as 1500 scientists and doctors to administer hundreds of thousands of steroids to the athletes (Allden, 2009; Dimeo et al., 2011). The literature shows that the GDR program adopted a top-down communication model, albeit done secretly with the involvement of the notorious State Police, the Stasi, which made it nearly impossible for athletes to have a say on the use or non-use of doping substances. This approach espoused by the Police demonstrates the State's interest in sports. It involved policymakers, sports institutions, scientists, coaches, and the primary subjects being athletes. The case of East German athletes provides a critical example for research into anti-doping communication. The GDR case is highly relevant because it can inform athletes to be aware of their surroundings and avoid indulging in doping activities.

Interestingly, Holt et al. (2009) assert that the use of performance-enhancing drugs increased when anti-doping regulations were introduced by the sports bodies with the establishment of WADA in 1999. Holt et al. (2009) further highlight some major cases to back their assertion about the evolution of doping in sports, such as the infamous disqualification of Canadian sprinter Ben Johnson at the 1988 Seoul Games for testing positive for stanozolol. The incident led to a Canadian investigation that claimed Ben Johnson was not the only athlete who doped at the Games and that at least half of the athletes at Seoul had also doped but were not flagged.

It is essential to point out that an American whistleblower and a former United States Olympic Committee (USOC) anti-doping official, Wade Exum, accused the USOC of a cover-up of doping cases from 1988 to 2000 (International Association of Athletics Federations [IAAF], 2003, para. 4). A key highlight of Exum's claims was that, eight (8) American athletes, including sprint legend Carl Lewis, had tested positive at the U.S. Olympic Trials in July 1988 "for ephedrine and ephedrine-related compounds in low concentration" but USOC cleared the affected athletes to compete at Seoul 1988 Olympic Games (IAAF, 2003, para. 4).

Moreover, the Atlanta 1996 Olympics was labelled the "Growth Hormone Games," while the 2000 Sydney Olympics was tagged as the "Dirty Games" (Holt et al., 2009). To expound this further, American sprinter Marion Jones was stripped of her five (5) medals by the International Olympic Committee (IOC) after confessing to using tetrahydrogestrinone (THG) (Holt et al., 2009). The testers are always playing a catch-up game with the designers of the performance-enhancing drugs because as modern testing regimes are being developed and implemented, the agents improve their methods and elude detection. Houlihan et al. (2019) assert that the commercialization of sports makes more money available to sports brands, agents, and athletes. On the other hand, anti-doping agencies have limited funding.

Meanwhile, a significant development occurred at the world-famous cycling event, Tour de France, in 1998, after the French Police seized a cache of performance-enhancing drugs in the camp of the Festina Cycling team, which finally forced the International Olympic Committee (IOC) to push for the establishment of an independent anti-doping body outside its supervision (Dimeo et al. (2012; Holt et al., 2009). Thus, WADA was established in 1999 with a three-prong objective to protect athletes, promote the values of clean sports, and preserve the spirit of sports internationally.

Notably, 16 years after the formation of the WADA in 1999, Russia was engulfed in a scandal involving the implementation of a state-organized "fail-proof doping system" that ensured zero tolerance for any trace of doping by Russian athletes (McLaren, 2016, p. 7). The 2015 Russian doping scandal is a classic case that involved all layers of the sports spectrum, including individual athletes, senior coaching officials of Russia Athletics, doping control officers under the direction of the Russian Anti-Doping Agency (RUSADA), the urine-swapping of athlete samples at the Moscow Laboratory, and more importantly the overt operations of the Russian Federal Security Services and Ministry of Sports (McLaren, 2016).

From the literature provided by McLaren (2016), it can be inferred that the Russian authorities employed a top-down communication approach. The scandal was made public following the airing of a documentary by the German public broadcaster (Seppelt, 2015), which exposed a state-sponsored doping scheme involving Russia and the IAAF, now known as World Athletics (Duval, 2017). A former head of the Russian anti-doping laboratory revealed further details of the scheme in an interview with the New York Times, showing how the Russian anti-doping system was compromised to delete any semblance of doping for elite Russian athletes. Duval (2015) argues that until the Russian doping scandal, the world anti-doping system had focused on individual athlete doping violations who did not have the backing of their national anti-doping structures. Thus, the world anti-doping regime was good

at catching isolated cases of doping while state sponsored doping schemes like that of Russia gained notoriety.

Ahead of the 2016 Rio Olympic Games, hundreds of Russian athletes protested their innocence as they argued that they had been victims and not participants of the systematic doping scheme by the Russian state (Duval, 2015). Many of the athletes had to prove they had had prior doping tests outside of Russia and that they did not have previous positive doping tests on their records, among other stringent IOC conditions, before being admitted at the Rio 2016 Olympic Games. Ultimately, the IOC prevented as many as 111 Russian athletes from competing in the Olympics because they failed to satisfy the stringent IOC conditions for admission.

Of the 389 Russian athletes who had submitted applications to the IOC for individual status to compete in a once-in-a-lifetime opportunity at the Olympic Games, 278 received clearance to compete. Inevitably, the Court of Arbitration for Sports (CAS) became the battleground for the disgruntled 111 athletes to make their cases. The CAS, however, sided with the decisions of the various Sports governing bodies to deny the Russian applicants from participating in the Rio 2016 Olympics. The incident painfully means that athletes can be deemed ineligible to compete in a major sports competition simply because their national governing bodies are non-compliant with the world anti-doping code. However, the CAS decision notes that athletes are not passive members of their national sports governing bodies and have a share or voice in the governance of their sports federations. The historical perspectives narrated above with the cases of GDR and Russia show that doping has always been a part of modern sports. However, athletes have always been the culprits because sometimes they lack information, education, and knowledge about it. Thus, displaying a clear-cut communication gap between stakeholders, especially the government, doping bodies on one side, and the athletes on the other.

2.2 The geopolitics of doping and the politicization of doping

There appears to be a misunderstanding between the United States of America and China on the one hand, the U.S. and WADA on the other on mistrust issues relating to doping in sports. In 2024, WADA explained their side of the story on the issue of the Chinese swimmers who competed in the Tokyo 2020 Olympics despite being caught doping (WADA, 2024). A WADA statement (WADA, 2024) sought to lay bare the facts surrounding the high-profile case of 23 Chinese swimmers who were allowed to compete at the Tokyo 2020 Olympics while another 11 were allowed to compete at the Paris 2024 Olympics despite being found to have allegedly inadvertently ingested a heart medication, trimetazidine (TMZ). The Chinese Anti-Doping Agency (CHINADA) made WADA aware of the situation prior to the Tokyo Games, but this information was not made public before the Olympics. Neither did CHINADA provisionally suspend the affected athletes pending the outcome of an investigation per WADA's own rules. The situation led to calls by USADA for WADA to ban the affected athletes and enforce their own doping regulations. However, WADA complained about "the politicization of anti-doping" following the publication of an investigation by the New York Times and other Western media outlets (WADA, 2024, para 8). The assumed dispute over the doping incident creates discomfort among the stakeholders (U.S., China and WADA) in political circles, as evidenced by the numerous media publications and speculations (Keating, 2024). Such development, when not adequately addressed, can have multiple effects on anti-doping issues in the future. The situation outlines the need for openness and transparency in anti-doping communication as espoused by Bronfenbrenner (1979; Backhouse et al. (2017).

WADA is caught in between the geopolitics of doping and the politicization of doping, which is threatening the very core existence of the worldwide anti-doping effort following the overwhelming acceptance of the WADA doping code in 2003 and the ratification of the 2005

UNESCO Convention on Doping in Sport governments (Houlihan et al., 2019; WADA, 2024). The literature shows the development may present challenges to WADA's legitimacy, funding, and ability to effectively communicate and enforce its worldwide agenda for anti-doping, contrary to the socio-ecological model Bronfenbrenner's (1979) and the dopogenic theory (Backhouse et al., 2017) which emphasizes a harmonized environment for all stakeholders.

In another instance, there is a case involving an American sprinter Erriyon Knighton in 2024 charged with the use of trenbolone-a substance used for muscle growth, but also administered to animals in the cattle industry (Keating, 2024). Knighton explained that the drug got into his system after eating contaminated meat. The decision for WADA to appeal on this case can be disturbing in the tensed environment of doping issues. For instance, the WADA spokesperson stated that USADA CEO Tygart would have been critical of the decision to accept Knighton's explanation if he was a Chinese athlete (Keating, 2024, p.14). Interestingly, on the same day that the U.S. selected Erriyon Knighton as part of its team for the Paris 2024 Olympics, China selected 11 out of the 23 athletes who were found to have doped before the Tokyo 2020 Olympics for the Paris Games. The latter 11 Chinese athletes faced more scrutiny from WADA in the lead-up to the Olympics in Paris.

In a further escalation of the row, the United States of America 2025 announced the suspension of its annual dues of \$3.6m to WADA to protect clean sports and to demand fair competition and accountability (USADA, 2025). U.S. Anti-doping applauded the move, noting that the U.S. is the single most significant governmental financial contributor (accounting for about 14% of WADA's annual funds) to WADA since its inception in 2000 (USADA, 2025). According to the Russian Interfax news agency, Russia similarly delayed payment of its annual dues to WADA in 2023 after the infamous Russian doping scandal in 2015 (Interfax, 2024). It followed Russia's doping ban from sports by WADA. This

development may support the notion that funding may be used as a weapon in anti-doping discourse and/or the politicization of doping, as alluded to earlier by WADA.

Historically, WADA has been funded by governments of the world, in a regional formula adopted in 2001, the United Nations and the Olympic Movement (WADA, 2024). The U.S. decision to cut funding may significantly impact WADA's finances including its ability to effectively communicate its mandate given the prevailing dopogenic environment. It could further complicate communication from a top-down approach, which sees WADA's role as the governing body being questioned by governments (Bronfenbrenner, 1979). It may further complicate athletes' dopogenic environment and interactions with relevant influencers such as family, social circles, formal institutions, and the mass media.

Ritchie and Jackson (2014) argue that the continuing geopolitics of doping only goes to prove that the acceptance of the WADA doping code in 2003 and the ratification of the 2005 UNESCO Convention on Doping in Sport were artificial and that governments signed up to the code due to what the authors call, "politics of appearance" (p. 196). Houlihan et al. (2019) argue that it was only a matter of time before things were going to escalate because WADA was founded (in 1999) during the decline of the Soviet Union and at a time when the Chinese were rebuilding their sport. More importantly, the development shows the symbiotic relationship between the political interests of nations on one hand and funding for anti-doping agencies on the other, per the statement by USADA. Therefore, governments may be willing to fund anti-doping agencies if they continue to deliver on their mandate of providing clean sport and accountability. Better still, governments may be interested in the work of the anti-doping agency for as long as it serves their political interests, in what WADA describes as the politicization of doping.

Houlihan et al. (2019) note that research suggests WADA may be underestimating the prevalence rate of doping in sports. According to the authors, WADA estimates that the

prevalence rate for doping in sports is between 1.08% and 1.6%, respectively. However, Ulrich et al. (2018) found the figure to be higher, between 43.6% and 57.1%. Holt et al. (2011) estimate that about 1% of WADA tests at accredited laboratories return adverse findings. Therefore, the decision by the U.S. government to cut its annual funding to WADA, which accounts for about 14% of WADA's funds, may have a broader implication for the work of the world anti-doping governing body.

Houlihan et al. (2019) suggest a relapse in international compliance and commitment to the founding frameworks of the worldwide anti-doping effort in sports because international sports federations place commercial interests ahead of the anti-doping effort, increased commercialization of sports, and the return of sports nationalism. Houlihan et al. reference the UCI 2015 doping scandal involving American cyclist Lance Armstrong and the IAAF doping scandal as good examples of cases where international sports federations placed commercial interests ahead of the anti-doping effort. (Houlihan et al., 2019).

Further, the historic case of the first American, Eric Lira, who was charged and found guilty of violating the Rodchenkov anti-doping Act, presents another classic case of how elite athletes dope to achieve success in international sport. The Rodchenkov Act, named after the Russian whistleblower who exposed the Russian doping scandal in 2015, was enacted and signed into law in 2022 to help curb doping in international sports and protect the U.S. national interest. The U.S. Justice Department charged Lira with selling human growth hormone and erythropoietin drugs to two international athletes before the Tokyo 2020 Olympic Games (Justice, 2023). He pleaded guilty to the charge and was sentenced to three months in jail.

The empirical evidence from the United States Justice Department (Justice, 2023) shows how Lira acquired banned performance-enhancing substances from Central and South America, communicated with the athletes via encrypted electronic communication, and was

found to have advised the athletes to blame any possible adverse positive results on meat contamination. Lira's case study may offer insight into the working of unscrupulous agents and the resort to using meat contamination as a cheap excuse when athletes are caught doping. This may give fodder to Reinold's (2022) assertion of athletes' use of deceptive communication when caught doping.

The literature and case studies above illustrate that the politicization of doping may not necessarily have a positive impact on African athletes but rather lead to a loss of confidence in the anti-doping effort. However, this shows the importance of having strong anti-doping institutions or agencies to defend the rights of athletes and present a platform for independent arbitration of cases in the athletes' dopogenic environment. However, the literature shows that the case of African athletes is different, given the lack of information, education, institutional awareness, and lack of anti-doping structures (Ruwuya et al. (2022).

Despite the lack or limited knowledge and information on anti-doping, Ghana's Shakul Samed was handed a three-year ban for returning an adverse finding for furosemide, and Liberian para powerlifter James Siaffa was handed a reduced sentence of a 3-month suspension by the International Paralympic Committee (IPC) in 2012. Similarly, Nigerian boxer Cynthia Ogunsemilore was handed a provisional suspension for testing positive for furosemide by the International Testing Agency (ITA) before the Paris 2024 Olympics (BBC, 2024). The 23 Chinese swimmers and the U.S. athlete were not found guilty of doping despite adverse findings against them.

2.3 The African doping context

Historically, Africa's colonization by Western powers has had a long structural and economic impact on the continent because of the transatlantic slave trade, unfair trade practices, and resource exploitation of Africa (Boahen, 1985). According to Boahen (1985), through colonial rule, Western hegemonic cultural practices were enforced in African

countries, further creating social stratifications and conditions that benefitted the colonialists. Based on their colonial masters, African countries are predominantly tagged as Francophone or Anglophone countries, reflecting French and English colonial rule and imperialist cultures. The ensuing triangular trade that still sees African countries exporting raw materials to powerful corporate organizations in exchange for finished products and unfair trade practices impacts the socio-economic development of African countries (Boahen, 1985). The research argues that sports are not a high-priority area for development for most African countries as governments grapple with more pressing concerns to alleviate poverty, provide portable drinking water, and build infrastructure (Lindsay, 2016). The latter trend is akin to colonial heritage that can affect sports development and anti-doping communication in African sports.

In further explicating the impact of the socio-economic context of African countries on the anti-doping scheme, Lapouble (2024) argues that most African countries cannot effectively apply the WADA code on anti-doping. The ones who can apply the WADA code cannot fully apply it. Lapouble (2024) explains that most African countries do not consider anti-doping a top public policy because of overbearing developmental issues, public administration, corruption, public health, and the structuring of sports organizations. This may have ramifications for the athlete's dopogenic environment at the individual, social, institutional, and policy levels.

African countries face challenges in establishing robust national anti-doping agencies or National Anti-Doping Organisations (NADOs) and executing WADA's policies on anti-doping (Ruwuya et al., 2022). Ruwuya et al. (2022) argue that the African perspective was not considered during the anti-doping policy formation processes that began after the Festina Cycling doping scandal at the Tour de France in 1998. Ruwuya et al. (2022) argue that WADA's initial creation was Western and Eurocentric, and that only South Africa attended the Monitoring Group of the Council of Europe's Anti-Doping Convention, from which

proposals were made for the World Conference on Doping in Sports. According to Ruwuya and colleagues, Africa has had to implement and subscribe to a Western WADA code and policy. This presents a challenge for Africans because their views were not heard, let alone captured for consideration. Further, it tends to create unfair situations and discomfort for Africa and their sportsmen and women, who should abide by the same strict policies of WADA, considering their structural deficiencies in forming national anti-doping agencies.

Ruwuya et al. (2022) suggest that doping is alien to some African cultures and cite a case in Senegalese wrestling, where local wrestlers fought against the introduction of anti-doping processes in 2015. This is how one wrestler put it, "We do not need doping tests in our sport. Wrestling isn't a white man's business" (Hann, 2017, p. 1). Hann argues that the Senegalese example illustrates "cultural biases built into modern athletics" (p. 1). Based on the above explanation of the wrestler, the authors recommended that African countries continue to address inequalities and social issues by establishing robust anti-doping programs through south-south collaborations between National Anti-Doping Agencies and Regional Anti-Doping Agencies (Ruwuya et al., 2022).

There are presently five Regional Anti-Doping Organizations (RADO) in Africa, and Ghana is a Region IV member in Africa and collaborates with the Kenya Anti-Doping Agency of Kenya (ADAK) (Ruwuya et al., 2022). African nations continue to learn the rudiments of anti-doping from among the experienced nations on the continent due to similarities in culture and belief systems among African countries. In a most recent meeting of the WADA President and 12 African nations in February 2024, the WADA President Witold Bańka mentioned three main thematic areas, namely "robust and relevant anti-doping programs, increased funding for anti-doping, and the importance of placing athletes at the center of the mission" (WADA, 2023, p. 1). From the statement, it becomes clear that understanding the anti-doping program and its anti-doping communication are critical for the

continent. In that meeting, WADA discussed the special case of Nigeria's non-compliance to the WADA Doping code after their NADO failed to address WADA's several concerns about its anti-doping programs, resulting from their auditing in 2022 (WADA, 2024). However, Ruwuya et al.'s (2022) study was silent about anti-doping communication on the African continent. This can probably create awareness and education on anti-doping for African athletes.

Africa has recorded some doping cases over the years. For instance, hundreds of athletes from Kenya have been suspended, banned, and punished for their involvement in doping cases (Longman, 2023; Ogama & Sakwa (2019)). These are unique because they are not considered a state-controlled doping program, unlike Russia and the former East Germany. In support of the above statement, Sebastian Coe (former President of World Athletics) stressed that the Kenyan government is not complicit in this act of doping (Longman, 2023). Interestingly, the Athlete Integrity Unit (AIU) reports that 27 top Kenyan long-distance runners were banned for doping offenses, representing 40 percent of the elite athletes suspended in global long-distance events in 2022. Between 2015 and 2023, 270 Kenyan athletes were given worldwide doping suspensions (Longman, 2023). The list of athletes includes Olympic, World, and famous world marathon winners such as the former world and Olympic champion in the men's 1,500 meters, Asbel Kiprop, the 2016 women's Olympic marathon champion Jemima Sumgong, the 2014 New York City Marathon champion and a former marathon world-record holder, Wilson Kipsang, and a three-time winner of the Boston Marathon, Rita Jeptoo. From the above statistics, 12.6% of Kenyan athletes were involved in doping issues between 2015 and 2023. Longman (2023, para. 11) notes that:

Doping in Kenya is facilitated by a loose network that includes not just runners seeking an edge but also real and fictitious doctors, fabricated documents; fake hospital visits and treatments; pharmacists; coaches; and agents — often as part

of schemes that the AIU said amount to "criminal conduct" (Longman (2023, para. 11).

The literature shows there is a changing phase of doping in Kenya as official indifference to anti-doping appears to have given way to more pragmatic efforts by the Kenyan government to mitigate the effect of doping in its sports ecosystem. The Kenyan government has established a national anti-doping program and has been investing \$5 million annually into the project since 2016. Despite criminalizing doping and expanding the testing pool of athletes, the Athlete Integrity Unit (AIU) recons doping is fuelled by the historical context of Kenyan runners who see athletics as an escape from poverty and the lack of out-of-competition testing for second-tier elite athletes in that country (Longman, 2023). Thus, the literature shows Kenya is progressing in its fight against doping. However, there is a need for more effort to combat doping in its sports ecosystem and transform the athletes' dopogenic environment.

Ogama and Sakwa's (2019) research found a direct relationship between economic factors and doping after administering a questionnaire to 1785 athletes in Kenya. The authors further recommended that because of the poor economic status of those athletes, they must be given anti-doping education, which can empower the youth to acquire knowledge and information on doping. They highlighted the relevance of involving parents of athletes in anti-doping endeavors as key to helping instill good societal values in children. This shows that anti-doping communication must extend beyond the athletes, their immediate family, and possibly extended family, which is crucial in many African settings (Acheampong et al., 2020). For instance, closed family, hybrid family, and shared family play a significant role in their lives, providing tangible and intangible things for the betterment of their upbringing).

The case of South African athlete Caster Semenya evoked passion, nationalism, and massive media coverage ever since the sensitive issue of her gender and high testosterone

levels became public at the 2009 IAAF World Championships (Cooky et al., 2013). Semenya was asked to subject herself to controversial gender verification testing after winning the 800m final at the Championships. Semenya's body physiologically or naturally produces high levels of testosterone, which gives her a competitive advantage over her fellow female competitors. This view supports one of the claims for unintentional doping propounded by Jeffrey (2011). World athletics governing body, World Athletics, initially suspended the South African athlete from competing internationally before imposing a ban that can only be lifted on the administration of suppressing medication to bring her testosterone levels to average female level.

2.4 Doping in Ghana

Doping in sports has been a rare phenomenon, especially in domestic sports in Ghana. However, in the modern era, there is a public record of at least four doping cases of Ghanaian athletes based abroad, including Ghanaian sprint legend Aziz Zakari, who was given a 2-year ban for testing positive for the steroid stanozolol in 2006 (New York Times, 2006). Likewise, World Athletics suspended long jumper Marc Awere for three months for a doping violation after participating in an athletics event in France in 2001 (IAAF, 2003). Sprinter Tim Abeyie, a former British sprinter who switched nationalities to compete for Ghana, was handed a 4-year ban after testing positive for the steroid stanozolol and metandienone at a meet in Germany on 4th July, 2015 (Rowbottom, 2016). Goalkeeper Richard Kingston was also banned for six months after testing positive for testosterone in 2005 by the European football governing body, UEFA Adjei (2005). Interestingly, the above doping bans were recorded outside Ghana. In this context, the news of Shakul Samed positive test at the Birmingham 2022 Commonwealth Games was received with shock in the country.

Adu et al. (2023) investigated the phenomenon of doping among minnows in Ghana and concluded that inadvertent doping is a leading cause of doping among school children in

sports. Through in-depth interviews with participants who had previously participated in school sports, the study found that participants took performance-enhancing drugs without the needed education about the risks associated with taking the enhancers and lacked general information about doping rules. In addition, the authors identified that some minnows intentionally take drugs to enable them to lose weight to meet eligibility requirements for specific sports competitions. This illustrates the lack of information and understanding of anti-doping rules among young athletes and their coaches. They recommended a targeted approach to anti-doping education in the country.

Sagoe et al.'s (2015) pioneering work in sub-Saharan Africa gives a broad view of the problem of the use of performance-enhancing drugs in Africa, particularly Ghana. Sagoe et al.'s (2015) work reports the gap in the literature on doping and mentions that there was no prior research on AAS in Africa at the time of the study. The investigation found that nonmedical AAS use is a widespread public health concern in Ghana. From a large sample size that included 2597 participants, the study revealed a high frequency of the use and intent to use AAS among high school students.

Moreover, the prevalence, use, and intent to use AAS were higher among males than females. The investigation posited that the perception of AAS usage has a negative connotation for the social image of the individual user of AAS. Sagoe et al. (2015) assert that human enhancement drugs are abundant, particularly illicit drugs on the black market in Ghana, which support other studies (e.g., Danquah et al., 2011; Buxton & Hagan, 2012; United Nations Office on Drugs and Crime, 2013). The findings of Sagoe et al.'s (2015) investigation are alarming and raise further questions about how school children can purchase illicit drugs in the first place. However, Buckley et al. (1988) also found that almost 7% of school children sampled had used AAS, while a third of the respondents reported using AAS when they were 15 years old or younger.

2.5 Unintentional Doping

Cases of unintentional doping tend to provoke and generate backlash against sports institutions, and, in some instances, anti-doping organizations engender public debate or discourse. Cooky et al.'s (2013) work examined the coverage of the Caster Semenya gender testing scandal of doing through a comparative analysis of media stories in America and South Africa. The central issue in the controversy is whether athletes who have androgen levels higher than the typical male or female levels have a competitive edge over other athletes. Their studies further examined the apparent divide associated with gender, nation, equality, sex, and oppression as framed by the mainstream news media coverage of Caster Semenya. The authors employed textual and content analysis of newspapers in the United States of America and South Africa by sampling 13 national newspapers in America and three South African newspapers concerning the investigations. The study found that American newspapers based their reportage on suspicions surrounding Semenya's performances because she made dramatic progress over a short period. Also, Semenya appeared masculine and had a deep manly voice. The study found that American print and online media framed the story in medicalized debates about sex testing.

In contrast, South African online and print media framed the story as a human rights violation and nationalist agenda while employing "strategic essentialism" that portrays Caster Semenya as a hero and a woman defending an assault on their nation (Cooky et al., 2013, p. 31). However, the athlete was not at fault in any way because her body naturally produces androgens at a level much higher than the normal female body. This could have been treated as a natural phenomenon since she has no control over hormone production in her body.

Anderson (2011) investigated claims of unintentional drug taking in sports and urine testing by athletes. He argues that a positive urine test for a banned substance does not automatically mean that an athlete intentionally or deliberately took a banned substance to

enhance performance. Anderson (2011) categorized the claim for unintentional drug-taking into four main leading factors such as insufficient education, passive exposure to prohibited substances, ingestion of tainted substances, and physiologically high levels of performance-enhancing substances in natural human bodies. He suggests a positive test for cannabinoids could be associated with second-hand smoke or morphine from poppy seeds. However, the author believes the possibility of a positive test for the latter agents is rare. Based on that, Anderson (2011) advocates for a careful review of positive test results by considering the claims by the athlete with what is known.

The use of dietary supplements in sports is a subject of much debate because it provokes discussions on unintentional doping. Martinez-Sanz et al. (2017) defined unintentional doping as a phenomenon arising from ingesting supplements with contents otherwise banned by WADA or generally contrary to the WADA doping code and regulations. Historically, it was not until 2000 that the issue of dietary or nutritional supplements in sports became a problem, leading to the first studies on nutritional supplements by Kamber et al. (2001). Geyer et al.'s (2001) remarkable work in Germany laid the groundwork for studies in the field of contamination of nutritional supplements when they tested 634 non-hormonal supplements for testosterone and its prohormones, boldenone, and nandrolone and its prohormones. Their research work found that 15% of the samples comprised prohormones or hormones that were not labeled. Geyer et al. (2001) traced the source of the contamination by analyzing nutritional supplements subject to cross-contamination with a focus on prohormones in different territories from 2001 to 2002. They found that Germany and the United States were among the countries with the maximum production of nutritional supplements. At the same time, Austria and the Netherlands ranked the highest in terms of contamination in supplements.

Martinez-Sanz et al. (2017) investigated the extent to which prohibited substances by WADA can be found in food supplements. The study focused on unlabeled doping substances in dietary supplements used in sports. In their article, the authors reviewed studies published in PubMed on known metabolites, markers, and substances on WADA's list of banned substances in ergo-nutritional supplements. The research identified a total of 446 studies, out of which 23 studies met the criteria for the analysis. Significantly, the study found prohibited substances by WADA in most of the sampled supplements in their assessment, including anabolic steroids, mental enhancers, 1,3-dimethylamylamine, and prohormones. The authors further advocated for controls and regulations on how the supplements can be packaged to improve the safety of the products. The research found that the problem is not only with the labeling of the products but also with the number or amount of substances in the products. The findings show that athletes must be encouraged to consume a higher rate of supplements to achieve more significant results by their coaches, families, and other athletes.

Martinez-Sanz et al. (2017) identified the leading cause of contamination in supplements as cross-contamination that may occur on an inefficient production line or a deliberate act of a product manufacturer. In both cases, an athlete who consumes the supplements may have an adverse finding against them even if there is a low concentration of the contaminants (Martinez-Sanz et al., 2017). However, a lack of knowledge about the contamination is no excuse for an athlete who gets caught doping because of WADA's strict liability principle. Periodically, WADA publishes adverse findings from its laboratories on the internet and a list of prohibited substances to sensitize and educate athletes about the potential dangers of consuming products and substances. However, cases of doping by athletes continue to abound, and there is a particular concern about how dated lists and publications filter through to athletes in developing countries.

There is enough literature to back the assertion about the high rates of consumption of supplements among athletes, as demonstrated in the study conducted by Tscholl et al. (2010) at the 12th IAAF World Championships. According to Tscholl et al. (2010), their research relied on out-of-competition data collected by World Athletics, the athletics governing body, for purposes of doping controls. In total, 3887 questionnaires were analyzed. The study established that the highest consumption of nutritional supplements and medications occurred among adults and people participating in outdoor events. The results also showed that the use of nonsteroidal anti-inflammatory drugs (NSAIDs) in athletics was much lower compared to reported figures for team sports. Significantly, developing countries, including African countries, recorded a lower use of nutritional supplements and medication, and speculate it may be due to undersupply of the products in those territories.

2.6 The media's role in anti-doping communication in sport

Literature on anti-doping communication in sports suggests a combination of factors, including the mass media, the establishment and funding of the work of the national anti-doping agency, and the anti-doping ideology, have had a profound impact on anti-doping communication over the years (López, 2014). López explores the concepts of "doping deaths" and "doping health dangers," which have been propounded by expert literature made up of scholars, scientists, health professionals, and the media (p. 223). The research found that there is a lack of conclusive empirical evidence to prove doping deaths and doping health dangers. Rather, López (2014) identifies fear as a key factor in the anti-doping discourse that has created an atmosphere of "social fear" around the "health hazards" and the use of performance-enhancing substances to a significant effect (p. 223).

However, López argues there is a disconnection between fact and the discourse on health hazards and contends that the public has been deceived into believing the anti-doping rhetoric. As a result, the study argues that the anti-doping propaganda machinery has been

able to impose its hegemony over the discourse on doping, thereby presenting itself as the truth and has thus laid a claim to legitimize and impose its outcomes. For example, the investigation analyzed some famous deaths in doping, such as Arthur Linton and other alleged victims of the human growth hormone. It concluded that there were other plausible causes of the death of the athletes, such as heat stroke, that the media and expert literature may have overlooked. Further, the research suggests that the repetitive publication of propaganda by expert literature and the media makes the claims legitimate in the eyes of the public, who see such information as common sense.

The study relies on the theoretical work of Altheide (2010) in risk communication and likens doping communication in the media as a prime example of risk communication and the discourse of fear. The study notes that "fear limits our intellectual and moral capacities, turns us against others, and it changes our behavior and perspective and makes us vulnerable to those who would control us to promote their agendas" Altheide (2010), p. 150). The study states that the phenomenon of fear is reflected in the subsequent institutions and policies formulated to ensure compliance with intrusive doping regulations that affect the personal liberties of athletes. The study concludes that doping deaths are a baseless claim by scholars and the press, serving the interest of anti-dope and ensuring a broad acceptance of what it refers to as the politics of fear.

Sandvik et al. (2016) found that doping communication reflects a hegemonic discourse that sees doping as "immoral" and "inexcusable" (p.2). The study suggests that young athletes' ability to deal with issues of doping and social pressures in the future may be limited. The paper considers doping a double-edged sword because it presents a dilemma to many athletes. On the one hand, doping is generally regarded as immoral, unhealthy, and unethical (Jedlicka, 2014; Kayser, 2015; Møller, 2008). At the same time, athletes depend on performance and results to determine successful outcomes and sponsorship. Interestingly,

doping can be a shortcut to achieving success in performance, but it carries consequences reflected in negative attention and repercussions such as bans.

Reinold (2022) offers an insight into what he calls deceptive communication by examining the autobiographies of six deceiving cyclists who claimed to be clean athletes but were all later found to have doped. Reinold found a relationship between effective communication and doping. He identified six deceptive communication techniques by examining the autobiographies of prominent cyclists caught doping, including Lance Armstrong, Floyd Landis, Johann Bruyneel, Michael Barry, and Udo Bölts. These include moralization of doping, playing victim to doping policies, overemphasizing doping policies, downplaying the reality of the doping milieu, false claims about a lack of doping knowledge, and intentionally leaving out information on doping.

The athletes mentioned earlier all later confessed to doping. Thus, the study theorizes that through narrative analysis, one can discover when an athlete is hiding something when discussing their knowledge of doping (Reinold, 2022). For instance, both Lance Armstrong and Floyd Landis discussed in detail their knowledge of the drug Actovegin and Testosterone, respectively, in their autobiographies. Still, both denied a former understanding of the drug Actovegin and the testing procedure in earlier interviews before they were each caught doping.

2.7 Communication technologies, applications(apps), and digital devices for sportspersons

In contemporary times, technology has enhanced various human experiences, including sports. This allows professional athletes to use different apps to keep track of their performance and analysis measurements. In contrast, recreational athletes generally use contemporary apps to track their performances and to motivate themselves (Westmattelmann et al., 2021). In this respect, nutritional apps help athletes take stock of their diet intake and

plan accordingly, while the MyFitnessPal app helps athletes plan their daily workouts. Social media facilitates information flow and knowledge sharing among athletes, as witnessed by WADA's creation of the Adel platform Woolf (2020). WADA and other international sports governing bodies have capitalized on using smartphones and apps such as WhatsApp to facilitate communication between athletes, coaches, family, teammates, and doctors by creating their platforms. Woolf (2020) notes that WADA developed its e-learning platform ADEL to merge all its e-learning platforms, which focuses on informing and educating athletes, coaches (CoachTrue), parents (Parents' Guide), and medical personnel (Sports Physician's Toolkit) about doping. A higher version of the module known as ALPHA also takes athletes through a series of lessons, culminating in a 12-point multi-choice test question that tests athlete knowledge on doping- Can these platforms support those athletes with low levels of education, and are they language specific? Are they integrated platforms with language specific or only designed for specific groups of athletes? This approach may mimic a one-size-fits-all anti-doping communication.

Likewise, the International Olympic Committee's Athlete 365 platform creates a platform to support, educate, and advise athletes on issues about competition, careers, and out-of-competition activities (Athlete 365, 2024). It is a one-stop shop platform for athletes, which the IOC Athletes Commission has created to cater to the needs of career athletes. However, Woolf (2020) suggests that athletes' knowledge of doping has been low for the last half-century and will remain due to a disconnection between WADA's athlete requirements, methodology, and how athletes are assessed if they meet standard requirements. Woolf observes that the connections should be relational and not linear. Whereas there is a large body of academic literature on doping and sports in the Western world, there is a shortage of literature on doping in sports in Africa.

2.8 Theoretical framework

The present study draws on Bronfenbrenner's (1979) Socio-Ecological Model (SEM) to explore doping communication in Ghana (see Figure 1. below).

2.8.1 Bronfenbrenner's socio-ecological model and the dopogenic environment

The research adopts the socio-ecological model because the model helps assess the impact of anti-doping communication's effectiveness, framing, and penetration via existing sports structures (setting, programming, activities) in Africa. Bronfenbrenner's model posits that communication programs that focus on the individual to effect behavioral change without considering the mediating factors or obstacles that affect the communication process may not be effective in the long run. The SEM framework enables a systems approach to analyzing communication programs Bronfenbrenner (1979).

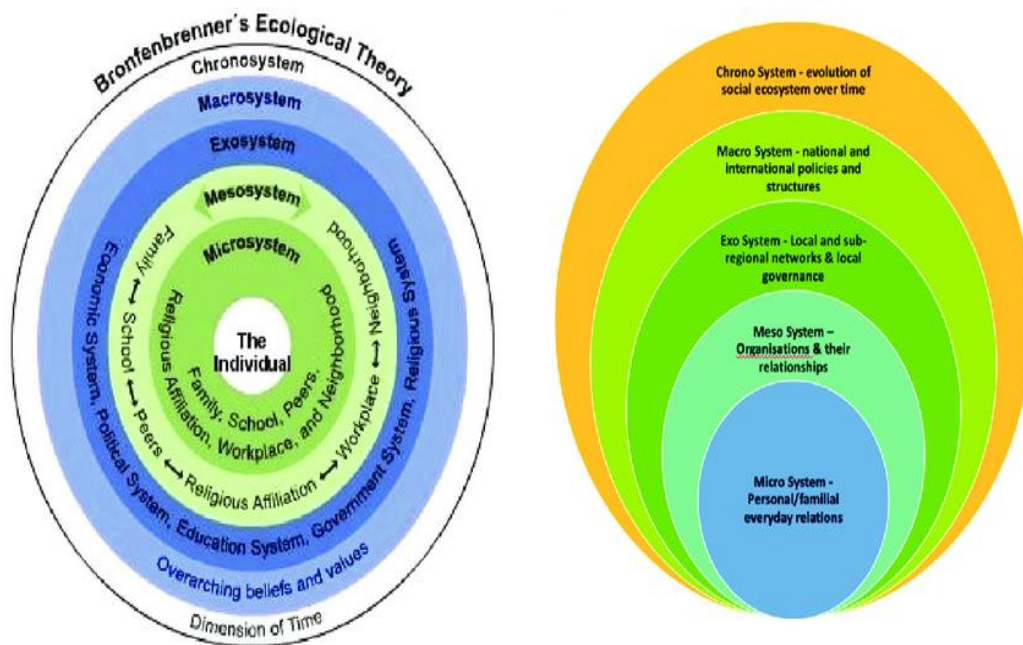


Figure 1. Bronfenbrenner's (1979) Socio-Ecological Model.

In this regard, athletes are not analyzed in isolation but rather within the complex social interactions that occur in the community and the society where they find themselves. There is further consideration for the physical environment, infrastructure, and the overall communication process that affects athletes. Thus, SEM is a meta-model showing four levels encompassing the individual, social networks, community, and societal Bronfenbrenner (1979). There are sub-theories of change associated with each level. The theory posits that the individual level is characterized by the ideational communication and behavior change model: the interpersonal relationship theory applies to the social networks level, the participatory communication model fits the community level, and the mass media theory applies to the societal level.

In the context of the present investigation, the interpersonal relationship theory at the social networks level can help assess the impact of doping communication's effectiveness, framing, and penetration via existing sports structures in developing countries. The critical assumptions of embeddedness and emergence underpin the model. The concept of embeddedness means every structure is found within other structures at different levels. On the other hand, emergence refers to the idea that the system at each level is greater than the sum of its parts. The model suggests a top-down approach to communication where higher levels can facilitate and, or negatively affect lower levels, making it essential for behavioral change programs to impact all four levels to be impactful and achieve the program's objectives. Moreover, researchers have used the social-ecological model extensively in behavioral change research, including sports. Tredinnick and McMahon (2021) explored college coaches' impact on student-athlete discourse on sexual violence prevention. They concluded that student-athletes who had discourse with their coaches about sexual violence were likely to take steps to address the issue when it occurs and would be more

knowledgeable about campus resources than those who did not engage in the latter discourse with their coaches.

Further, Dimeo et al. (2012) found that anti-doping projects, when done through influencers like family, coaches, peers, and institutional support, can serve as essential forces and deterrents to doping behavior among athletes. The study found a link between individual attitudes and behavior in the social context and broader cultural setting. The findings from the study indicate that overall athlete attitude towards drug use was very low, indicating intolerance towards drugs.

Backhouse et al. (2017) argued for a more rounded approach to studying anti-doping rule violations (ADRV) in further explicating the socio-ecological model. They introduced the term "dopogenic" environment. The latter dopogenic concept assumes that an athlete's "surroundings," "opportunities," and "conditions" influence anti-doping violations in sport (p. 1485). The authors argue that their discourse is supported by the findings of an independent commission of the WADA Commission and the positive behavioral change such an approach generates. The paper relies on the Foresight Report on Obesity in the UK, highlighting that the "whole system" inflicts harm to obesity to formulate its concept of the dopogenic environment (p. 1485). The paper advocates for studies into doping to move beyond the individual and focus on social and environmental factors in anti-doping policy. An athlete is the sum of his social and ecological interactions with formal and informal structures, such as health and education institutions and international sports organizations. The paper suggests that a few anti-doping rule violations are only due to individual errors.

CHAPTER 3: METHODS

3.1 Design

The research relies on in-depth interviews, observation, and primary data from the World Anti-Doping Agency to examine anti-doping communication in Africa. The research uses a qualitative approach and relies on fieldwork at the African Games, Accra-2023, to gain first-hand information and knowledge about African anti-doping communication practices. The investigation explores the issues affecting anti-doping communication from the primary sources of information: athletes and officials of sports governing bodies and official anti-doping documents. Webb and Webbs (1932) defined an in-depth interview as a guided conversation to examine attitudes, events, and experiences in greater detail. It gives detailed insights into people's behavior and relationships. The information being sought is qualitative. Therefore, relying on in-depth interviews is one of the most appropriate methodologies to extract the needed information. The research has the added advantage of interviewing athletes and officials, enabling the research to explore how anti-doping is being communicated from the top and how the athlete receives the communication. I developed semi-structured interview questions for the athletes and officials based on the three research questions (see Appendix A).

3.2 Participants and procedure

Participants were recruited through convenience sampling using the Ghana Athletics Association and personal contacts. I conducted interviews and gathered policy documents, guidelines, and doping-related materials during my visit. Participants ($N = 18$) were 12 NADO officials (males: $n = 9$) and 6 athletes (males: $n = 1$). Out of the 12 officials, 6 were African officers and 6 of the officials were national sports federation officials. The researcher conducted in-depth interviews with all the participants at the 2023 African Games in Accra, Ghana. Table 1 presents a description of the participants.

Table 1. Participants and their description

Participant	Pseudonym	Gender	Country	Profession/role
Interviewee 1	P1	Male	Uganda	Sports administrator
Interviewee 2	P2	Male	Nigeria	Anti-doping officer
Interviewee 3	P3	Male	Zimbabwe	Anti-doping officer
Interviewee 4	P4	Female	Tanzania	Anti-doping officer
Interviewee 5	P5	Female	Namibia	Anti-doping officer
Interviewee 6	P6	Male	Liberia	Sports administrator
Interviewee 7	P7	Female	Kenya	Government official
Interviewee 8	P8	Male	Nigeria	Sports administrator
Interviewee 9	P9	Male	Ghana	Anti-doping officer
Interviewee 10	P10	Male	Ghana	Coach
Interviewee 11	P11	Male	Ghana	Anti-doping officer
Interviewee 12	P12	Male	Ghana	Sports administrator
Interviewee 13	P13	Male	Ghana	Athlete
Interviewee 14	P14	Female	Mauritius	Athlete
Interviewee 15	P15	Male	Gabon	Athlete
Interviewee 16	P16	Male	Cote D'Ivoire	Athlete
Interviewee 17	P17	Male	Tunisia	Athlete
Interviewee 18	P18	Male	Ghana	Athlete

3.3 Data analysis

The study employed Braun and Clarke's (2012) six-stage thematic analysis (TA). First, the researcher familiarized himself with the research material and transcribed the audio

interviews into Word documents. This ensured that the transcriptions were reflective of the informants' narrations. Afterward, the transcriptions were given to two colleagues to crosscheck if those transcribed texts were the true reflection of the informants' accounts for consistency. The second phase involved generating initial codes from the interviews relevant to the research questions, noting both the semantic and interpretive meanings of the latter codes. Thirdly, the study generated themes from the interviews, linking words to form patterns and ideas concerning the research questions. Next, the study reviewed the generated themes. Fifthly, I defined and named the themes in various boxes. Finally, I made final decisions on the most important quotes that represented participants' views and produced the final report.

In early fall 2024, the author looked through the sample interviews and organized the interviews, policy materials, and documents. The author pursued further online interviews and requested more documents and materials from the contacts that he made during the African Games. The researcher spent the fall and early spring 2025 semester completing the thesis and planned for my thesis defense in late March 2025.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Field trip to Ghana: Accra 2023 African Games

On the invitation of Ghana Athletics, the author visited Ghana in the first week of March 2024 to attend the 13th African Games being held in Ghana. The author arrived in Ghana on Friday, 1st March 2024. It was challenging to track down officials of the Ghana national anti-doping outfit and officials of the African Union because they were busy putting the finishing touches to their preparations. According to officials who spoke to the researcher, the African Games' anti-doping program was not ready, thus placing the game in jeopardy. A top official of the African Union told the researcher:

Unfortunately, I wouldn't be able to go deep into it. But it has been so challenging. One of the (most) difficult things I have ever embarked on in my close to three decades (in anti-doping) is the preparations for these Games (P2, Nigeria, Regional Anti-Doping Official: Accra 2023).

The Games had been delayed for about a year to allow the Ghanaian government enough time to prepare to host it due to the worsening economic situation in the country in 2023 and also because of some organizational bottlenecks between the African Union and the Association of National Olympic Committees of Africa (ANOCA). The author's initial observations confirmed the assertion by scholars that sports are not a high-priority area for African countries, which are burdened with pressing concerns to alleviate poverty, provide portable drinking water, and sustainable roads (Lapoulde, 2024; Lindsay, 2016).

The situation is consistent with the literature that asserts the historical context of Africa's colonialism by European powers has had a long structural and socio-economic impact on the continent (Boahen, 1985). Although others may argue that the COVID-19 pandemic and other economic challenges have significantly impacted economies worldwide, Africa's

existing structural and historical context makes it more vulnerable to such an economic downturn.

Meanwhile, at a press conference on 4th March 2024, Ghana's Minister of Youth and Sports Mustapha Ussif announced that the country's national anti-doping bill had finally been passed into law on 28th February 2024, just in time for the Games (JoyNews, 2024).

However, the Games were thrown into some level of confusion when the World Anti-Doping Agency suspended Africa's only accredited laboratory in Bloemfontein, South Africa, for "multiple non-conformities with the International Standard for Laboratories" (WADA, 2024: para 3). An official of the African Union told me that the African Union (AU) had initially contacted the South African Lab to test samples from the 2023 African Games but received no response.

African Union officials, government officials, sports administrators, and athletes were open and spoke about anti-doping. Many were happy that an American University was interested in exploring anti-doping communication in Africa since that is a grey area for research. I was invited and subsequently attended Africa's First Ever High-Level Forum on Anti-Doping, organized by the AU Commission for Sports with support from WADA, at Kempinski Hotel, in Accra, on 7th March 2023. The latter forum formed part of WADA's effort to sensitize and involve top decision-makers in African Sports in anti-doping work. The forum was attended by top officials of the African Union, the World Anti-Doping Agency in Africa, sports ministers of African nations, and their representatives. The Association of National Olympic Committee of Africa (ANOCA), Athlete representatives, and International Sports Federations were conspicuously missing from the forum. There is more on this topical and thorny issue later in this study. The Minister of Youth and Sports of Ghana also did not attend the forum, and this was highlighted by one of the main speakers at the forum.

The author participated in the forum and got the opportunity to discuss the present research interest in anti-doping communication, and this, in turn, made it easier to speak to a wide variety of stakeholders from the continent. Overall, the trip was a success as it enabled the researcher to gain first-hand information, education, and knowledge on anti-doping and to perform a scientific inquiry into the research area independently.

4.2 In-depth interviews

The research interviewed anti-doping experts, athletes, and sports administrators from Ghana and Africa at the 2023 African Games. All athletes who participated in the in-depth interviews disclosed that they had not knowingly taken performance-enhancing drugs. Four broad themes and other subthemes were generated from the analysis. The broad themes include Political Interest (3 sub-themes), Mistrust, Event-based/interpersonal communication, and Limited Technology use. The themes and subthemes are presented in Table 2.

Table 2. *Anti-doping communication themes, subthemes, and their sources.*

Themes	Codes/Sub-themes	Sources
4.2.1 Interest from [Policy makers (7 direct/Indirect mentions)	5.1.1 Lack of understanding and knowledge	9 direct mentions
	5.1.2 Africa’s socio-economic context	8 direct/indirect mentions
	5.1.3. Lack of funding	7 direct mentions

4.2.2 Institutional
mistrust

Coordination
Integrated communication
Extranet
Mass communication
Structure of African sports

WADA Observer Mission
Report documents

4.2.3 Event-
based/interpersonal
communication

4.2.4 Limited use of
Technology
communication

4.2.1 Political Interest from Policy Makers

The socio-ecological behavior (SEM) change framework emphasizes the importance of personal, interpersonal, community, institutional, and policymakers to achieve effective anti-doping communication (Bronfenbrenner, 1979). Sports is not a priority area for African governments because of existing colonial legacies that make policymakers prioritize social and economic needs over sports (Ruwuya et al., 2022). Most informants admitted the need for more interest from policymakers, in particular government officials, as the leading cause of ineffective anti-doping communication in Ghana.

P11(Ghana, Anti-Doping Official) is an anti-doping officer in one of the African zones and elaborates on the direct relationship between political interest in anti-doping and knowledge seeking, budgetary allocation, anti-doping laws, and funding.

In doing projects, the West might be ahead of Africa. That is understandable.

What influences this comes to the interest governing bodies will show. When I say interest, this would not be sporting but probably at the political level. That interest should be there. How important doping matters are considered at the national level will determine the budgetary allocation to these national anti-doping organizations or committees and the utilization of such budgetary allocations. You can only do as much as your funds will permit you to do.

Interest will drive you to seek knowledge. So, a politician will be driven to seek knowledge on this. In seeking knowledge, you will find out there is the need to get funding for it, and boom! I think Ghana just passed an anti-doping law in parliament, which is a great thing. It should be celebrated. Gradually, the interest is coming. It is our view that that would translate to an increase in budgetary allocation (P11, Ghana, Anti-Doping Official).

Participant P11(Ghana, Anti-Doping Official) notes in the above quote the importance of political interest in promoting anti-doping communication in Ghana sports. This may be the cause of the anonymity of anti-doping communication in African sports because the socio-ecological model emphasizes a top-down approach to communication. Therefore, if policymakers lack interest in the importance of anti-doping and clean sports, then this challenges the assumption of the socio-ecological model. Further, the participant observes that Ghana's hosting of the Accra 2023 African Games generated enough political interest, leading to the passage of Ghana's national anti-doping laws on the eve of the Games. P11 responded: "I should think so. The African Games should leave us with much legacy" (P11, Ghana, Anti-Doping Official).

Overall, research participants elaborate on political interest in anti-doping communication under the subthemes of understanding and knowledge, colonial legacies, and funding.

4.2. 1.1 Understanding and knowledge

The socio-ecological model makes it essential for policymakers to have personal and institutional knowledge of anti-doping to achieve an effective anti-doping communication framework. Most participants indicated that policymakers lack knowledge and understanding of anti-doping. As P3 (Zimbabwe, Regional Anti-Doping Officer), puts it:

Some of the people who are in positions of power have no clue as to what anti-doping is. People always think sports is always about winning medals. So, we need to get our ministers or permanent secretaries, director generals of sports, ministries, sports commissions, and councils to understand this. We need the Olympic Committees to come in and use resources from Olympic Solidarity to fund these conferences and workshops to empower the athletes so that as they go to the Commonwealth Youth Games and African Youth Games, already their

knowledge level should be high so they can avoid the pitfalls their elder brothers and sisters have made (P3, Zimbabwe, Regional Anti-Doping Officer).

In support of the above statement is P6(Liberia, Sports Administrator), a sports administrator believes policymakers' including him, lack of knowledge and understanding of anti-doping and this may affect an effective anti-doping communication effort. He recalled that:

As I sat in today, listening to the WADA presentation and listening to the head of WADA, it became an eye-opener for me. Just imagine somebody at my level, and this is an eye-opener. Then, imagine what may be the case down the line. I think our policymakers need to begin to ensure that, as a first step, we have anti-doping laws. (Or) Introduce anti-doping regulations so that in the absence of the laws, we create awareness around it so that all the sports federations abide by them in conformity with international laws(P6, Liberia, Sports Administrator).

One of the WADA's reports highlights an incident where the President of the African Boxing Confederation (ABC), a Togolese national, refused to allow anti-doping officers to conduct a test on a Togolese boxer who had been notified and readied for a test at the 2015 African Games in Congo-Brazzaville (WADA, 2015, p.6).

Possible Refusal – on 7 September, a Boxer from Togo was notified of his selection for doping control. After signing the notification section of the doping control form, the President of the African Boxing Confederation, who is also from Togo, approached the Chaperone and athlete, informing them that the athlete did not have to be tested. Despite being told that the athlete was selected for testing and must comply with the procedures, otherwise risking a potential anti-doping rule violation, the President of the Confederation would not permit the athlete to be tested. The athlete left, and the DCO and Chaperone filed a report to COJA (WADA, 2015, p.6).

The WADA report shows that the Togolese official demonstrated a lack of understanding and awareness about anti-doping laws, potentially risking a doping violation for the individual boxer.

A participant (P1, Uganda, Sports Administrator) describes how a lack of government interest in anti-doping manifests when representatives in the Ministry of Sports who become well-versed on the issues of anti-doping are reshuffled to different Ministries later leaving a void:

For example, you find that the person who has been attending the meeting has been reshuffled, and it is not the case that the individual has not put in the information. It is just that when the person leaves, certain things emerge, creating gaps. It is challenging, but the more we go on, with people like you coming out trying to bridge that gap, research, and stuff like that, the more we will reach that point. However, it goes back to people now really getting down to understand what is going on (P1, Uganda, Sports Administrator).

P7 (Kenya, Government Official) dissented on the view that policymakers lack understanding and knowledge about anti-doping. She outlines the Kenya's governments efforts at combating anti-doping, in support of the literature by Longman (2023).

Yes, in Kenya the government has established an anti-doping agency for athletes that provides all the information about anti-doping to our athletes. They organise sensitization and workshops and they test athletes often. Our athletes do well all over the world and it is our responsibility to help them. We don't want to compromise them. So, the government has invested a lot of money in this fight against doping. There is a lot of information, and even those who are found to be doping, it is a criminal offense (P7, Kenya, Government Official).

4.2.1.2 Africa's socio-economic context

Africa's economic challenges are linked to the continent's colonial past exploitation by Western nations, and this affects how much African nations can invest in sports and anti-doping communication (e.g., Boahen, 1985; Lapouble, 2024; Lindsay 2016; Ruwuya et al., 2022, UNESCO, 2018).

P5 (Namibia, Anti-Doping Officer) notes that African governments face challenges from other sectors of the economy, and this may negatively affect anti-doping communication and education. This perspective supports the literature that says African governments face peculiar economic challenges because of colonial legacy. P5 recapped that:

As you know, Africa has its problems. On resources, they(government) focus on what they think is critical. Of course, we know poverty, housing, and economic problems exist. So, those are the things the Ministry understands. That is my view. Of course, we will make sure the government understands those they push. They push for legislation to be in place to cover anti-doping. However, other countries see the advantages in health and education, so sports also get a small amount of the funds, making it difficult for the anti-doping organization to focus on doping (P5, Namibia, Anti-Doping Officer)

WADA Observer Reports (2011, 2015) acknowledge problems with the anti-doping communication programs of several editions of the African Games due to the economic problems some African economies face in hosting events of the magnitude of the African Games. The situation presents problems for host nations, further disrupting the anti-doping communication for the Games, coupled with limitations on which level of communication anti-doping communication can be done.

However, it cannot be ignored that the economies involved are either emerging or very poor ones. And in some cases, the level of resources, despite the best intentions, will not ensure pride of place for anti-doping on the hierarchy of needs. In light of this, it will be imperative that the continent of Africa receives more assistance and support from the international anti-doping community (WADA, 2011, para.13).

Moreover, the economic problems of African countries have led to sporadic changes in host nations of the African Games because of worsening economic conditions of the original host nations of the Games (WADA, 2011). For instance, the 10th African Games was switched to Mozambique from Zambia in April 2009. The 12th African Games was switched to Morocco from Equatorial Guinea, and the Accra 2023 Games were delayed for about a year. The anti-doping program was further affected by the overall financial constraints of the host nation, Mozambique, while the local organizing committee lacked the resources to execute the anti-doping program (WADA, 2011). There is further evidence in the WADA report of the 11th African Games in Congo-Brazzaville in 2015, which was described as "chaotic and unorganized," filtering down to the anti-doping program. According to the WADA report:

Every aspect of the doping control program could be improved, with a particular emphasis on proper planning, budgeting, communication, and organization (WADA, 2015).

The WADA statement highlights the socio-economic context of African countries and the effect of the African country's vulnerable economic situation on the anti-doping effort.

4.2.1.3 Funding

African countries lack funding to establish robust national anti-doping agencies to execute the WADA's global anti-doping policies (Adu, 2023; Ruwuya et al., 2022; Sagoe et al., 2015). The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2018) estimates that African countries spend about 0.5 percent of GDP on sport compared with the global average of two percent (2%). Although funding is crucial for establishing effective anti-doping communication, most participants admitted that funding is a significant problem. P9 (Ghana, Anti-Doping Officer) admitted funding bottleneck and was optimistic that the situation would improve.

Yes, funding. As I indicated earlier, we were not structured earlier. We take our funding from the Ministry, but it is non-existent. However, they provide infrastructure. On human resources, the RADO has indicated they can help, and the Ministry is also helping. Now, we have passed that stage. If we are to be fully institutionalized, we need a source of funding. Instead of taking what has been allocated to the Ministry, which is not good enough for them, we need our own. However, those are in the past. I think we are toughening up. So now we are hoping for the best (P9, Ghana, Anti-Doping Officer)

P5 (Namibia, Anti-Doping Officer) observes that the government's lack of funding for anti-doping limits how anti-doping activities can be carried out.

Of course, we know there are no resources, and we have not established our national anti-doping policy. So, we look at the event. If many athletes are going to attend, there are the community is coming (then we go). However, there are not as many events for the country as needed. We focus on the capital city where the majority of the people live. So, we need to get resources to cover the whole country.

P5 demonstrates how anti-doping programs are being carried out despite financial challenges. Thus, anti-doping communication and education are restricted to major sports events near the capital city.

To strengthen the argument, P5 (Namibia Anti-Doping Officer) admits there should be a direct link between funding and anti-doping communication programs. Others also acknowledged that anti-doping activities are restricted to sports events and are mainly done through talk presentations to the Nation's elite athletes before a major competition such as the African Games, Commonwealth Games, and Olympic Games. How can this approach be sustained in the dynamic sporting environment? Yet, it may be a way for the nations and sports federations not to expose their inability to recruit qualified personnel due to lack of funding for systematic anti-doping education.

Therefore, there is a lack of penetration of communication to the broader spectrum of athletes in the country. According to P9(Ghana, Anti-Doping Officer), it is about those stakeholders' refusal to invest in medical resources and equipment for the benefit of countries. He mentioned, "we do not have robust medical setups" and this can affect the quality of anti-doping communication to athletes and their coaches.

Funding is noted as a major bottleneck to the successful execution of anti-doping programs at the 2011 and 2015 African Games events as highlighted in the WADA Observer Report of 2011 and 2015 respectively. The local organizing committee of the 2011 African Games in Mozambique needed more resources to execute the anti-doping program (WADA, 2011). There is further evidence in the WADA report at the 11th African Games in Congo-Brazzaville in 2015 which was described as "chaotic and unorganized," and it filtered down to the anti-doping programme.

However, P3 (Zimbabwe, Regional Anti-Doping Officer) dissented on the perspective that funding is a major problem for anti-doping communication in Africa and rather laid the problem on how sports are branded in Africa. He narrated that:

Sometimes, funding is not the problem. It is the idea that is the problem because we have funding from UNESCO, from Olympic Solidary and various corporate organisations funding Olympic sports. But it is how we package our sports. How do we sell our sports to the private sector to get funding for the things we have to do? It is not just about government. Like is the case of Nigeria, immensely gifted. Blessed beyond measure but it is how to utilize those imminently qualified scientists and educationists within Nigeria that can help the Nigerian athletes, and that can help to fine-tune the Nigerian anti-doping system that can help the interest of the Nigerian athletes and by extension African athletes like we are discussing the case of Ghana. If Ghana does well, then Africa does well P3 (Zimbabwe, Regional Anti-Doping Officer).

P8(Nigeria, Continental Sports administrator) the lack of government interest in funding sports generally and anti-doping programs specifically.

It will not happen for us. For example, you can't do sports without funding. I am concerned because sports is part of my life. If not for sports, I will be maybe in the bush rearing cattle but sports has taken me to every part of the world. You will find out that the interest is not there. The governments are not supporting sports and we have a lot of young people. In Africa, you will get somebody who has 30 children – and he will find it hard taking care of them. So, the government is not interested in sports. They are not helping the youth. We have a lot of big companies. Why can't

they(governments) task them to support sports? They will tell you they have given some gratification to members of parliament, members of the national assemblies. For instance, Coca Cola. What are they giving back to the youth? MTN, what are they giving back to the youth? If they can donate 2% of their OneEm, it will go a long way. We just spend a little P8(Nigeria, Continental Sports administrator).

4.2.2. Institutional mistrust

The Socio-Ecological Model and the Dopogenic concept assert a systems approach to communication with an emphasis on a top-to-bottom approach for effective anti-doping communication to affect athlete use or non-use of performance-enhancing drugs. Therefore, there is a need for an interactive and timely communication channel between the games organizing committee, anti-doping agencies, policymakers and individual athletes ahead of events. The primary data shows that the power structures (Hall, 2015) and hegemonic discourse (Bate, (1975) in African sports negatively directly affect the anti-doping communication program. A WADA report on the 12th African Games made some key observations and recommendations.

Communication is key. Every MEO (Major Event Organizer) should value the importance of communicating all the relevant information regarding the anti-doping program in advance of the Games, for example through their own website, local media or the website of the Organizing Committee. In addition to mass communications to NOCs, which did not work on the occasion of the 12th edition of the African Games, we would highly recommend every Organizing Committee to establish an NOC extranet, allowing for better sharing of information to all participating nations. Anti-doping could benefit from such an extranet and make a lot of various materials available directly

to NOCs via this channel. Communication with IFs is an integral part of the success of an anti-doping program, it allows for the clear establishment of the roles and responsibilities of all parties involved and permits each party to openly present their expectations and requirements. This is particularly important when certain tasks are delegated to the IFs that will require them to prepare and plan accordingly. For future Games, the MEO and LOC need to explore more efficient ways of interactive communications with IFs and certainly need to prioritize this to be done as early as possible (WADA, 2019, p. 33)

The WADA (2019) report paints a picture of athletes' dopogenic environment (Backhouse et al., (2017) in Africa and raises issues about the timing and release of anti-doping communication ahead of the games. The report recommends the use of mass communication tools like extranet, website, games website and local media to ameliorate the situation. Significantly, the report mentions a lack of effective interactive communication between the Games organizer and International Federations because this could pose problems for ratification of performances in the end which can affect the fortunes of individual athletes. Thus, the report highlights the inadequacies in the anti-doping communication effort at the continental level and this may be a reason for the individual athlete rule violations recorded by African athletes at international events. The report gives a historical background to the African Games.

The African Union (AU) is a continental body consisting of the member states that make up the countries of the African Continent. It was officially launched in 2002 as a successor to the Organization of African Unity (OAU, 1963-1999). The Association of National Olympic Committees of Africa (ANOCA) is an international organization that unites the 54 National

Olympic Committees of Africa. The Association of African Sports Confederations (AASC) is an umbrella organization composed of 53 African Sports Confederations. On 15 February 2018, a trilateral agreement was concluded between the AU, as the owner of the African Games, ANOCA and AASC, under which ANOCA was entrusted with the management and the organization of the African Games, while AASC was entrusted with the technical aspects and coordination of the Games (WADA, 2019, p 5).

The WADA (2019) report above gives a background to the historical tensions between the organizer of the African Games, the African Union, on the one hand, and the Association of African Sports Confederations (AASC) and the Association of National Olympic Committees of Africa (ANOCA) on the other hand. There is a present disagreement over sponsorship monies for the Games between the AU and ANOCA from the 2019 Games, according to Nation (2023). ANOCA accuses the AU of not providing information and communication on the Games and announced its decision to stage its own competition in 2027. This fact is corroborated in the WADA report which states that "mass communications to NOCs (National Olympic Committees) did not work on the occasion of the 12th African Games" (WADA, 2019, 33). This was despite a previous protocol agreement between ANOCA and the AU in 2018 that paved the way for the 2019 African Games to be recognised as an Olympic qualifier. The study finds that the present hegemonic discourse and power structures (Bates,1975) in African sports (Nation, 2023) may affect communication at the top and further downward to the primary targets of the anti-doping effort: athletes and coaches.

The continental problems mirror the problems encountered in individual African nations where government sports agencies directly conflict with autonomous national sports federations, some of whom draw their funding from the government. In one instance at the Brazzaville 2015 Games, the WADA (2015) report highlights the chaotic nature of the anti-

doping setup because of "internal conflicts" between officials of the National Anti-Doping Agency and the head of the Anti-Doping Sub-Commission (ADSC) and this affected "communication on every aspect of the anti-doping program" (WADA, 2015, p.6).

The National Anti-doping Office's structure, funding sources, and administration compound its autonomy, leading to conflicts. Per WADA's guidelines, if a nation lacks an anti-doping office, the National Olympic Committee automatically takes up that role. However, conflicts arise when government national sports agencies similarly set up rival national anti-doping agencies, leading to tensions between the government and the National Olympic Committee.

The researcher asserts clashes between the Ministry of Youth and Sports and autonomous national sports federations are a constant feature in Ghana sports and African nations, especially in funding and decision-making on the composition of teams for the major sports events. This leaves no room for the representation of anti-doping officers on Ghana's teams in the Games. For instance, there have been probes into Kenya's and Ghana's participation in the Maputo 2011 All African Games event, respectively (Kwaw, 2012). In both instances, the National Sports Council, originally established by the British colonialists in Anglophone Africa and elsewhere, and the National Olympic Committee were seen to be at loggerheads over the leadership, funding, and administration of national teams to the Games. The chaotic environment created by the political tensions tends to affect communication in and among the teams and the Games organizers who themselves have communication problems with the Association of National Olympic Committees of Africa (ANOCA).

Further to the WADA recommendation on using mass communication tools to inform organizations and individuals about the games, the study found that the official website of Accra 2023 had a subdomain for 'Medical and Anti-Doping' (Accra, 2023). However, the latter domain only provided a scanned form for Therapeutic Use Exemptions (TUE) for

Athletes or the National Olympic Committee's requesting exemptions for athletes to use substances otherwise listed on WADA's prohibited list for medical reasons. The present study notes that the TUE form has been one of the recurring recommendations made in both the WADA report of the 12th African Games in Morocco and the 11th African Games in Brazzaville 2015.

4.2.3 Event-based communication

Participants made up of sports administrators, athletes, and anti-doping officers observed that anti-doping communication is event-focused because of funding and structural constraints and does not penetrate to the grassroots, and this may account for the low level of anti-doping knowledge among athletes and officials alike. This is evidenced by athlete engagements, workshops, and talk programs at major sports events like the Accra 2023 African Games. P11(Ghana, Anti-Doping Official) recapped that:

Tournaments and games offer platforms that help with education. So, beyond the meetings we will normally hold with the Chef de Missions and Chief Medical Officers, the training we do for them so they return to their countries to disseminate this. I speak authoritatively in this area because I am a trainer of trainers and tend to be a team doctor. So that hits at the individual level.

Quiet recently, we have had the opportunity to do so on various media platforms, so I believe that because of these available platforms, we have been able to touch on the individual, the mass media, and the community levels.

There is not an established program. Federations of Confederations might have established programs like that of the Confederation of African Football.

P11(Ghana, Anti-Doping Official)

This participant highlights that Africa's anti-doping communication effort is event-focused rather than proactive, which can promote activities of doping and anti-doping on the

continent. In other words, it is a reactive measure towards a 'face-saving' approach, which is mostly presented at large gatherings to create the impression that it exists. Though they can get their messages across to the intended officers who are supposed to relay the information to individual athletes in their respective countries, this is not sustainable either. He points to the disparity between programs of individual sports federations and continental bodies and notes that federations may not have systematic anti-doping communication programs.

When done through influencers like family, coaches, peers, and institutional support, anti-doping projects can serve as important forces and deterrents to doping among athletes (Dimeo et al., 2012). Participants indicate that anti-doping communication is being carried out mainly at the interpersonal level between athletes and their coaches. Most of the athletes note their coaches' positive role-play in anti-doping communication.

P16 (Cote D'Ivoire, Athlete) shared that with the support of his coach and sports psychologist, he gets access to valuable information on anti-doping to guide his training and activities. He said, "Yes, my coach and psychologist. He gave me many lessons in the sport (anti-doping). I live in France. In Ivory Coast, I do not know".

Getting relevant information from his team to avoid being misled relating to environmental influences on anti-doping violations in sports (Backhouse et al., 2017) is vital for his athletic performance. This participant explained that he has a coach, doctor, and psychologist to work with at his base in France, but this was not the case when he resided in his home country. P16's (Cote D'Ivoire, Athlete) claim was further backed by other athletes who had also experienced the same support limiting their exposure to more effective anti-doping communication when on international assignments at the Olympic Games and World Championships than conditions in their home country.

The athletes rely on their coaches to provide anti-doping education based on the interview sample, in Ghana and Africa. Most athletes indicated to the research that they

consult with the coaches on anti-doping issues. An athlete from Tunisia and an Ivorian athlete based in France indicated they consult with their federation, doctors, and coaches. The observation shows a strong interpersonal relationship between athletes and coaches and a further demonstration of the positive effect of the socio-ecological model and the athlete's dopogenic environment. Thus, the study finds coaches to be very important in the fight against doping and anti-doping education in this respect. In the modern era, coaches found to have colluded with athletes in doping violations can be banned together with the athletes.

Another participant (P17, Tunisia, Athlete) reports that every athlete in his national team was tested before attending the Accra 2023 African Games: "They did do some test for us before we came (to the Accra 2023 African Games) and every athlete turned out with nothing (not positive).

An athlete (P14, Mauritius, Athlete) said she participated in an anti-doping course on WADA's Adel platform before departing for the Accra 2023 African Games. She recounted her experience after attending a workshop on doping:

Well, we had a course in Mauritius, and I had to do a course for beach volleyball through the federation. We did that, so we know a little bit. It helps. Sometimes, we take some supplements, and we do not know if it is legal or not. Not only legal but whether it is (classified) as doping or not.

Having precise (information) from WADA is good (P14, Mauritius, Athlete).

P13 (Ghana, Athlete) acknowledges participating in previous anti-doping programs in the national team and at major sports events like the Olympics but complains about the quality of the latter program and its effect on athletes. This participant, P13 (Ghana, Athlete), further shared reservations:

I do not think the anti-doping officers have been well thought about doping.

They told me not to take vitamin C and some drinks. However, I told them it

was ok to take them. Some athletes became afraid after the anti-doping workshop (at the Africa Games 2023). Some of them are new to the national team, and I do not know them. They were panicking, but I was cool with it because my coach had taught us about it, so we knew more about it. At the African Games, I realized that many of the athletes did not know anything about anti-doping. (P13, Ghana, Athlete).

Thus, P13 (Ghana, Athlete) explains how ineffective anti-doping communication can compound the woes of athletes as they seek to comply with WADA's worldwide standards.

A participant also explains how athletes' attitudes to anti-doping educational programs can affect individual athletes' anti-doping rule violations. P2 (Nigeria/AU, Anti-Doping Official) narrated that:

Most of the doping cases you hear (in Africa) are because of negligence or I say, in quote, "stupidity," naivety and some of them are because the communication is not there, or somebody decided to take home, "an I don't care attitude." I would not say that all those heads of communication are elites because communication does not penetrate that much (P2 (Nigeria, Anti-Doping Official)).

Participant notes that over 100 doping tests have been done in Ghana from 2013 to 2023. Participants indicate that one adverse finding was flagged during the period, and it was the case of a boxer who used a banned substance. This is how P3(Zimbabwe, Regional Anti-Doping Official) elaborates:

Since I started administering testing in Ghana, we have administered more than 100 doping tests. We have had only one positive doping test. That is not to say,

by and large, Ghanaian athletes are clean, but that is to say we need more testing. P3(Zimbabwe, Regional Anti-Doping Official)

Another participant (P13, Ghana, Athlete) confirmed the above narration and explained that the Ghanaian boxer who tested positive for a banned substance back in 2013 used the same drug that led to Shakul Samed's disqualification at the Birmingham 2018 Commonwealth Games (i.e., furosemide, a diuretic and masking agent). The same athlete further recapped the same incident explained below:

The boxer who was guilty of doping and I were tested (by the anti-doping officer) at the Accra Sports Stadium (in 2013). My coach received a call, and we were asked to report at the stadium. Some boxers use the drug (furosemide) to reduce weight. He did not know too much about anti-doping. I do not know the medicine they took. The same issue pertains to Shakur Samed. Senior boxers and others know more about anti-doping, but junior boxers need more education. If not, Doctors and pharmacists may prescribe medications for them and land them in trouble (P13, Ghana, Athlete).

From the above statement, it appears that it was not the intention of the boxer to use performance-enhancing drugs knowingly. However, it reflects his lack of information and education on anti-doping.

Another participant, P10 (Ghana, Coach), emphasizes that the boxer's use of the drug furosemide was to aid him lose weight to meet the qualifying mark for his chosen event. The informant believes the case could have been due to the absence of a doping centre in Ghana. As he puts it: "There are no anti-doping tests for boxing in Ghana, and professional boxers are not tested before bouts".

4.2.4 Limited technology use

Participants gave a mixed response to the use of inexpensive communication technologies to facilitate anti-doping communication. On the one hand, administrators and anti-doping officers demonstrated knowledge and education on WADA's Adel e-learning platform. However, only one athlete said she had taken part in an Adel course before the Accra 2023 African Games. P2(Nigeria, Anti-Doping Official) shared that:

The whole thing about WADA and Africa is, we say if you want to hide anything from a black man or Africans, put it in the book. My training and work have prepared me for many things. I tell you, most of these things, I did not go for any formal training. I chair a task force, and WADA has made things so simple. WADA has a platform called ADEL, an education anti-doping learning platform where you can pick a whole lot of things. I have gotten certificates for not less than 35 from almost over 100,000 levels. I did over 30 certificates. So, for most of these things, you need to go into the books. It is online. There is a whole lot of empowerment you can get. In fact, I can talk confidently with anybody about anti-doping today based on empowerment (P2,Nigeria, Anti-Doping Official).

P2(Nigeria, Anti-Doping Official) demonstrates knowledge and information about anti-doping using WADA's Adel platform. There are obvious benefits to the programs on the platform. However, P4 (Tanzania, Anti-Doping Officer) explains that the Adel platform is elitist and can present language challenges to some athletes. That is:

We use that (WADA's Adel platform). But when you use that, you reach a few athletes, those elites, international stars, and whatever. Even when you go to the WADA anti-doping system, there is a program called doping e-learning. There is much information on that program -updated information

about anti-doping. However, the module is in French, and our colleagues do not know English or French. All of Tanzania know Swahili regardless of the local language. We have over 120 languages in Tanzania. All of Tanzania speaks one language: Swahili. So, it is difficult because you can find new information there using the Adel system, but the technology and language barrier make it challenging to reach them (P4, Tanzania, Anti-Doping Officer).

Similarly, P5(Namibia, Anti-Doping Officer) expressed knowledge about the Adel platform but said, "It is for "our elite athletes. It is e-learning and not for in-person."

Another participant, P3(Zimbabwe, Regional Anti-Doping Officer), shared that anti-doping agencies encourage athletes to use communication technologies to improve their health outcomes, but it is a process. He mentioned, "We are. We are trying. It is a process. We can't say we have failed now, or we have succeeded. But it is a process." ²⁴

Others acknowledge that the Adel app does not guarantee that every athlete can navigate it, especially since it may not be friendly for those without smartphones due to certain features. This makes P1(Uganda, Sports administrator) share that:

Getting reception to app use is not 100% due to the quality of phones, and low literacy levels among athletes," adding that the timing of the International Olympic Committee's Athlete 360 app engagement at significant championships is not the best P1(Uganda, Sports administrator).

Others acknowledged using different smartphones to check and monitor their heartbeat rate. For instance, P18 (Ghana, Athlete) admits to using an Apple smartphone for health purposes. "I use an Apple Smart watch to measure my heart rate, the distance I walk, and weight."²⁴ However, the same athlete denied knowledge about the WADA Adel app despite having competed in the highest level of athletics at the World Championships and World

Relays. This participant further showed a keen interest in discovering more about the app during the interview with me. P18 spoke about his experiences using the tablet to answer questions on doping at WADA athlete engagement booths across previous international events he attended. His action could be linked to environmental and situational influences affecting anti-doping violations in sports (Backhouse et al., 2017).

Others described how they gained more knowledge about doping and anti-doping during their visits to the WADA Athlete-engagement booths at international sports events than from the local Ghana anti-doping office. P12(Ghana, Sports Administrator) narrated that:

At the African level, when you go to the games, they have a tent when you get there, they give you a cup and T-shirts. There is no structural program to educate African athletes about anti-doping. World Athletics is doing well. Every time we go to the World Championships, there is a seminar on anti-doping or a seminar for safe sports and ethics (P12,Ghana, Sports Administrator).

Visiting the WADA premises, learning, interacting with their equipment, and answering anti-doping questions on computers and tablets were a testament to gaining some knowledge of the subject matter. Thus, an athlete's environment and surroundings affect the knowledge acquired and reflect the concept of a dopogenic environment (Backhouse et al., 2017), which plays a key role as an incentive for new information acquisition. Some informants believe that doping in Africa is fast growing out of proportion, and there is a need for a hands-on approach to tackle the menace. As P3(Zimbabwe, Regional Anti-Doping Officer) narrated:

Doping is a public health issue. We are trying, but we are still groping in the dark. Right now, it is getting to being a pandemic in Africa unless efforts are made to arrest the trend that is gripping our young athletes (P3, Zimbabwe, Regional Anti-Doping Officer).

CHAPTER 5: CONCLUSIONS

5.1 Limitations of study

The study had limited research participants and could not meet the initial target of 25 participants to reflect a broader view of Africa. I was able to interview 18 participants, including athletes, coaches, anti-doping officials, sports administrators, and government officials.

I could have sampled many more participants, but this was hampered by the initial chaotic nature of the Accra 2023 African Games and time limitations. I spent about a week in the Ghanaian capital during the spring break from February to March 2024 and had to return to school to continue with my studies. It was challenging to track down officials and athletes.

In a culturally and economically diverse continent like Africa, follow-up research needs to be done to analyze anti-doping communication trends in all the continent's major regions. Despite the low research numbers, the study reached a saturation point quickly, underlying the fact that many African nations faced the same problems as the others.

Future research could focus on using focal group discussions to gain a broader knowledge of communication among individual athletes, parents of athletes, coaches, anti-doping officers, sports administrators, and government officials. This study did not include the views of non-English speakers due to language limitations. Africa is dominated by French speakers, Arabic, Portuguese, and Swahili.

5.2 Conclusions

The study explores anti-doping communication and the broader context of anti-doping in Africa. The perspectives of athletes and sports officials show that anti-doping communication is affected by personal (education and information, low technology use, language barrier), social (social support and influence: coaches), institutional (mistrust among sports institutions, lack of coordination, limited/event-based communication), and public policy

(lack of knowledge awareness, funding, historical colonial legacies). It becomes apparent that any attempt to address effective anti-doping communication must adopt a multifaceted approach that ensures integrative communication between and among all stakeholders from the policy level to institutions, social to personal or individual athletes. The matter requires a radical approach to persuading policymakers to get interested and understand the importance of anti-doping in sports and the need to place athlete welfare at the center of sports.

The study established a strong relationship between athletes and coaches at the individual and social levels in anti-doping communication. It demonstrates a positive interpersonal relationship and communication between athletes and coaches at the social level of the socio-ecological model (SEM). According to the participants, anti-doping agencies sometimes engage athletes and athlete personnel in creating awareness and education about doping at the Games. Athlete engagement at the games is a more efficient way of educating athletes about the dangers of doping in sports. However, if localized or replicated in African countries, the WADA concept of athlete engagement can help reach the masses in school and professional sports settings. Athletes engage with institutions like WADA at the community level. There is little or limited anti-doping evidence of systematically using mass communication to disseminate anti-doping communication by participants. WADA (2019) admonishes the African Union to integrate mass communication tools in its endeavors. However, this is not enough in the long term to address doping problems in sports. The SEM asserts that communication must occur on all four levels to achieve effective communication. Thus, homogenization of communication on the individual, social, community, and societal levels serves a good purpose.

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Appendix 1

Semi structures interviews:

- How does Ghana's government and sports organizations provide information and policy guidelines on doping?
- How do you receive training on international and global doping regulations and policies? Do you receive training in implementing doping procedures? How frequently is this done?
- How do Ghana's sports organizations conduct workshops on doping for the sportspersons, if so, how frequently, and if not, why not?
- Describe the specific doping protocols for Ghana and African nations who are competing in the present African games, and international and global events?
- How does Ghana's sports organizations encourage and make available inexpensive communication technologies, apps, and digital devices for the sportspersons?
- How is doping communication being implemented on the individual, social, community and national levels?