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D3.3 Desk research report

A Review of Health Communication and Social Marketing Campaigns
to Inform the Operational Framework of the EWCS Campaign



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EUROPEAN WEEK of CLEAN SPORT



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PREAMBLE

This report is an outcome of the project EWCS– Developing and Implementing an Anti-Doping Communication & Social Marketing Campaign: The European Week of Clean Sport.

The Project EWCS aims to address the necessity of enhancing anti-doping education interventions that specifically target both competitive and recreational athletes. In recent times, the established system in the anti-doping organizations for education aimed at addressing the issue of doping in sports at every level of practicing. The Project EWCS acknowledges the necessity of progressing and revolutionizing the approach to the design, delivery, and evaluation of anti-doping education set in the WADA International Standard for Education.

In this respect, Project EWCS aims to:

1. Assess the needs of local sport stakeholders and sporting communities for the development of the European Clean Sport Week campaign.
2. Identify best practices in health communication and social marketing campaigns, and acquire examples from related initiatives such as WADA's Play True Day and UKAD's Clean Sport Week.
3. Co-develop an operational framework for the implementation of the European Week of Clean Sport with expert academics, National Anti-Doping Organisations, and relevant target groups.
4. Implement and evaluate the impact of the European Week of Clean Sport in 4 EU countries, with an emphasis on promoting clean sport values and anti-doping education across levels of sport and in an inclusive manner.
5. Provide policy and practice recommendations for the future implementation of the European Week of Clean Sport across Europe.

In order to achieve the second objective of the project the present report summarizes the best practices in anti-doping, health communication and social marketing campaigns.

INTRODUCTION

Doping in sport

Individuals who engage in sport and exercise typically do not enter with the intention of initiating the utilization of performance enhancing substances, such as anabolic steroids. In contrast, the utilization of doping substances tends to manifest progressively during advanced levels of sports engagement, driven by the desire to enhance both physical aesthetics and athletic capabilities (Hoff, 2021). The social determinants of doping risk in amateur and recreational sports include social situations, mentoring and "grooming" by experienced athletes, peer pressure, and "doping acculturation" (Henning et al., 2021; Hoff, 2021). According to Ntoumanis et al. (2014), factors at the individual level, including risk perceptions, attitudes and beliefs on the ergogenic advantages of doping, and resistance efficacy, play a significant role in determining the usage of doping substances in both recreational/amateur and elite sports.

Simultaneously, there are variations in anti-doping regulations and practices among nations, resulting in disparate consequences regarding the likelihood of doping, individuals' encounters with doping, and the enduring impacts of doping on their psychological and physiological well-being (Andreasson & Henning, 2019). For example, a study conducted by Henning et al. (2021) found that when comparing anti-doping policies, it was observed that environments and practices that are more restrictive and punitive in nature are more likely to result in higher psychological and social risks for individuals who engage in doping within exercise and amateur sport settings. In contrast, environments and practices that are less restrictive and focus on harm reduction were associated with lower risks. In contrast, the regulations and procedures pertaining to the prevention and detection of doping in organized and high-level competitive sports are primarily governed by the World Anti-Doping Code (WADA, 2021). These measures prioritize the prevention and avoidance of doping, underscore the importance of safeguarding athletes who adhere to anti-doping regulations, and adopt a punitive stance towards individuals found guilty of violating anti-doping rules. The provision of organizational structures, assistance, and available resources aimed at deterring the use of performance-enhancing substances in organized sports is notably deficient when it comes to recreational sports (Henning et al., 2021).

Health Communication & Social Marketing Campaigns

Health communication and social marketing campaigns have emerged as a valuable alternative in the field of public health. One potential strategy for encouraging the adherence to clean sport ideals and deterring the use of performance-enhancing substances in various sports settings is the utilization of mass health communication and social marketing initiatives. Typically, these campaigns focus on reaching out to large community groups and employ different strategies to raise the public's awareness and correspondingly promote behaviour change (Storey et al., 2015). Health communication and social marketing campaigns can induce societal and personal transformations across different behavioural domains and demographic groups (Firestone et al., 2017; Hull et al., 2017). This is contingent upon different elements of the campaign, including the execution of a meticulously devised plan, dependence on procedures grounded on empirical knowledge, a distinct focus on specific demographic segments, and the availability of alternatives (Daniel et al., 2009). Furthermore, research has shown that incorporating online distribution methods into these campaigns has the capacity to improve their cost-efficiency and enhance their overall effectiveness (Cugelman et al., 2011).

Health Communication & Social Marketing Campaigns against Doping

There is scarce published research on health communication and social marketing campaigns specifically targeting doping in competitive and/or recreational sport. However, Andreasen (2002) offers a comprehensive framework for the design and implementation of such campaigns. This framework encompasses seven key aspects, which are described as follows:

The first characteristic, denoted as **Behavior Change**, underscores the primary objective of social marketing campaigns, which is to exert influence and facilitate the transformation of behaviours towards desirable outcomes. A good understanding of the goal behavior and the various elements that impact it is necessary for this endeavour. Through the implementation of comprehensive research and the utilization of behaviour change theories, interventions can be meticulously crafted to resonate with the target audience and successfully facilitate the intended changes.

The second characteristic, **Segmentation**, acknowledges the heterogeneity present within a specific target demographic. The significance of segmenting the audience into various groups based on shared features, preferences, and requirements is underscored. This feature enables the tailoring of interventions, so guaranteeing their relevance and effectiveness for any subgroup.

The third characteristic, **Insight**, emphasizes the importance of understanding the audience's attitudes and beliefs towards the issue in question (i.e., doping). This is necessary for developing targeted communication strategies and interventions.

The fourth characteristic, **Exchange**, places emphasis on the notion of exchange within social marketing initiatives. The proposition suggests that in order for humans to embrace a novel activity, they must see a distinct benefit or advantage associated with its adoption. The transaction can manifest in a concrete form, such as the acquisition of a physical goods or the provision of a service. Alternatively, it can take on an intangible nature, such as the acquisition of knowledge or the development of a sense of belonging. It is imperative for stakeholders to guarantee that the perceived benefits of a given initiative surpass the perceived costs, hence incentivizing the target audience to engage in the desired course of action.

Competition is identified as the fifth characteristic of this method, since it recognizes the presence of various competing behaviours and influences that individuals encounter in their everyday lives. These options encompass a wide spectrum, including behaviour habits, societal conventions, and contradictory information from diverse sources. In order to achieve effectiveness, social marketing campaigns must acknowledge and confront these conflicting influences. Through a comprehensive understanding of alternative behaviours, social marketers possess the ability to customize their techniques in order to differentiate themselves and effectively convince individuals to select the desired action over other available choices.

The sixth characteristic, referred to as **Theory**, underscores the need of basing social marketing activities on well-established behavioral theories and models. The utilization of theoretical frameworks offers a systematic comprehension of human behavior, hence

empowering social marketers to develop evidence-based initiatives that are more inclined towards achieving success. The utilization of theories can facilitate the identification of crucial factors that influence behavior, enable the prediction of individuals' responses to interventions, and contribute to the formulation of persuasive messages and methods.

Finally, it is important to emphasize the continuous requirement for systematic data gathering and analysis throughout the entirety of the social marketing process, as indicated by research findings. The process entails the collection of data pertaining to the target demographic, the specific behavior under consideration, and the efficacy of the intervention. Research plays a crucial role in informing the process of developing, implementing, and refining social marketing strategies. Continuous monitoring and assessment enable the maintenance of relevance, impact, and adaptability of interventions in response to changing conditions.

The 4Ps framework (product, pricing, location, and promotion) presents an alternative framework for developing social marketing campaigns, the origins of which are in traditional marketing (Goi, 2009). The inclusion of the 4P components is crucial in the process of creating and executing interventions that are effective in fostering positive social behavior change. The term 'product' pertains to the specific behavior or activity that the campaign seeks to endorse or stimulate. It is of utmost importance to effectively establish and convey a precise delineation of the desired conduct to the intended recipients. This entails elucidating the advantages of embracing the activity and acknowledging any potential obstacles or apprehensions that folks may possess. As an illustration, within the context of an anti-doping campaign, the focal point would revolve around the attainment of doping-free sport. In the context of social marketing, price does not exclusively refer to monetary value, but rather encompasses the perceived costs involved with the adoption of the desired behavior. The costs in question have the potential to encompass both real and intangible aspects. Tangible costs encompass measurable factors such as time, effort, and financial expenses, whereas intangible costs pertain to less quantifiable aspects such as social shame, inconvenience, and emotional anguish. It is of utmost importance to comprehend and address these perceived costs in order to enhance the probability of adopting certain behaviors. The term 'place' encompasses the many channels and physical locations that facilitate the target audience's access to information, resources, and

assistance pertaining to the intended modification of behavior. This encompasses both tangible geographical sites and virtual online platforms. Selecting appropriate channels is crucial for effectively reaching and engaging the intended audience. As an illustration, a campaign designed to advocate for the adoption of nutritious dietary practices could strategically utilize educational institutions, community centers, and online social media platforms as primary channels for information transmission. Promotion encompasses the various methods and tactics employed to encourage the desired behavior among the intended audience. The scope of this concept includes various communication strategies, messaging techniques, advertising practices, public relations efforts, and more promotional actions. The process of effective promotion entails the creation of engaging messages that are able to resonate with the target audience, the utilization of persuasive strategies, and the selection of suitable media platforms. The objective is to foster consciousness, curiosity, and drive towards modifying one's behaviour (Lahtinen et al., 2020).

By doing a thorough analysis and incorporating these two marketing strategies, social marketing campaigns may be formulated to efficiently impact and motivate constructive modifications in behavior among a certain demographic. These strategies offer a strong basis for developing impactful campaigns that facilitate significant and enduring modifications in behavior among a wide range of target demographics.

The Present Study

The present study aims to identify best practices in health communication and social marketing campaigns, based on the extant literature. Therefore, only published studies in scientific journals are included in the review.

METHOD

Criteria for study inclusion

This report focused on examining the types of social marketing, awareness raising campaigns in the field of anti-doping. Emphasis was placed on existing collections of the conducted research. Therefore any review or meta-analysis that evaluated the effectiveness of such campaigns was deemed appropriate to be included in the report. More specifically, the report includes: a) Reviews evaluating the effectiveness of anti-doping and illicit drug use social marketing campaigns and b) Meta-analyses evaluating the effectiveness of anti-doping and illicit drug use social marketing campaigns. Studies written in English were included in the analysis.

Eligibility criteria

The eligible meta-analyses had to include interventions to athletes or adolescents older than the age of 15 years old. The eligible reviews had to include studies on anti-doping, health communication and social marketing.

Publication status

Inclusion criteria encompassed only published meta-analyses and reviews. Due to the language constraints of the study team, it was necessary for the studies to be accessible in English, even if the studies used in the meta-analyses and reviews were not required to have been conducted in an English-speaking population.

Outcome variables of the included studies

The outcome variables used for the selection of the studies were the following:

1. Self reported doping or illicit drug use, health behavior or behavior change.
2. Intentions towards doping/ illicit drug use, health behavior or behavior change.
3. Attitudes towards doping/illicit drug use, health behavior or behavior change.
4. Beliefs about doping/ illicit drug use, health behavior or behavior change.

Search sources

We obtained articles from the following sources:

1. Web of Science (Clarivate Analytics),
2. SPORTDiscus (EBSCO-host),
3. MEDLINE (PubMed),
4. ERIC and
5. PsycINFO (ProQuest).

On September 2023 we performed a Web of Science search that identified 4.760 records related to the topic of the report, a MEDLINE (PubMed) search that indicated 49 relevant records, an ERIC search that identified 11 relevant records and a PsycINFO (ProQuest) which revealed 8 relevant records.

The search terms included: public health intervention, public health campaign, social marketing intervention, social marketing campaign, public communication campaign, best practices in social marketing campaigns, anti-doping intervention, anti-doping campaign, doping, drug use, substance use, substance misuse, steroids, enhancement drugs, sport, review, meta-analysis. The search in each database was tailored to effectively depict the relevant articles. Furthermore, a manual search on Google Scholar was performed to refine the search. The search covered the period of 10 years, from 2013 to September 2023. The key words used included: public health, intervention public health campaign, social marketing intervention, social marketing campaign, public communication campaign, best practices in social marketing campaigns, anti-doping intervention, anti-doping campaign, doping drug use, substance use, substance misuse, steroids enhancement drugs, sport, review, meta-analysis.

Study selection

The outcomes of the search were examined by two experts on doping who assessed them by reviewing the titles and abstracts. All studies that were deemed possibly relevant based on the search were acquired in their entirety, and a minimum of two review authors independently evaluated the studies for eligibility. If there were uncertainties regarding the inclusion of a particular study, these concerns were addressed through deliberation among the two experts. Multiple papers were compiled and evaluated collectively as a single study.

Quality of included studies

The evaluation of potential bias in the studies that have been included in the analysis was performed. The meta-analyses were evaluated based on the Cochrane Risk of Bias Tool (Higgins et al., 2011). The evaluation of bias risk was carried out by considering various factors, such as the generation of a randomization sequence, concealment of group allocation, blinding of participants, data collectors, data analysts, and intervention providers, handling of incomplete or missing data, selective reporting of results, and identification of any other potential threats to the accuracy of the results. The evaluation of each item was conducted using a 3-point scale, with ratings indicating poor, medium, or high quality. The quality of the reviews was comprehensively evaluated using a combination strategy that relied on the AMSTAR checklist (Shea et al., 2007). This checklist is specifically created to assess the methodological quality of systematic reviews. The evaluation of each item was conducted utilizing the subsequent score categories: 'present' (denoted as Yes; Y), 'absent' (indicated as No; N), 'unclear or inadequately described' (represented as Can't answer; C/A), or 'Not applicable' (reflected as N/A). The frequency of descriptions that were included across all 11 check criteria for the assessment of article quality was presented. Subsequently, the categorization of each item was determined by evaluating the degree of risk associated with inadequate technique and/or bias. The items were classified into three categories based on their level of description quality: good description (80-100%), poor description (50-79%), or extremely poor description (0-49%).

RESULTS

Studies in the review

In total 4.828 results were revealed from the search in the databases. Of those duplicates were deleted and 4733 studies were excluded based on the title and abstract. The full-text articles of the remaining 95 records were analyzed. Out of the total number of records, 66 were eliminated because they did not meet the criteria for date of publication, type of study and reported result. In total 28 studies were included in the report, representing anti-doping interventions (8 studies), health (6 studies) and social marketing (14 studies) campaigns. No studies on health communication and/or social marketing campaign related to doping were found in the literature. A PRISMA flowchart of the systematic literature search is presented in Figure 1 and the list of studies included is presented in Table 1.

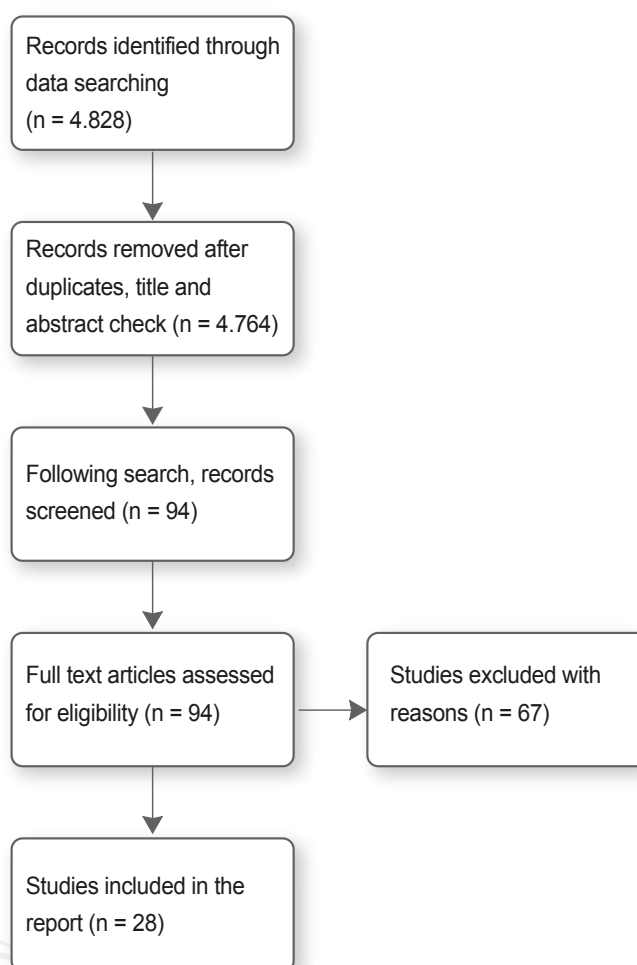


Figure 1: PRISMA flow diagram of studies included in the report

Characteristics of the included studies

Among the 28 included studies only four included meta-analyses. Of the four meta-analyses, one focused on anti-doping interventions; one in health communication interventions and two on social marketing campaigns. These meta-analyses involved 245 primary studies. None of the meta-analyses for anti-doping interventions and health interventions clearly reported the total number of included participants. The meta-analyses for social marketing campaigns indicated that more than 34.000 people took part in the included studies. Of the 24 reviews, seven focused on anti-doping interventions, five focused on health communication campaigns and 12 focused on social marketing campaigns. Seven of the included reviews did not report the number of studies included or more specific information on the participants in these studies. In the remaining reviews a total of 1875 studies have been reviewed.

Quality ratings

Using the Cochrane Risk of Bias Tool quality rating, two meta-analyses were evaluated as of high quality and two as of medium quality. With respect to the reviews four were rated as high of quality, 14 as of medium and six as low of quality. The main concerns with the quality of the reviews involved the description of eligibility criteria, and selection process of the studies included.

Effects of interventions

• Anti-doping interventions

Eight studies related to anti-doping interventions were evaluated. One of them was meta-analysis (Ntoumanis et al., 2014) and 7 were reviews (Bates et al., 2019; Daher et al., 2021; Mazzeo et al., 2019; Petroczi et al., 2014; Poppel, 2021; Sipaviciute et al., 2020; Woolf, 2020).

The meta-analysis investigated the effects of anti-doping interventions on doping intentions and doping behavior, as well as the effect of psychosocial variables on doping intentions and doping behaviors. The anti-doping interventions revealed a low to moderate effect ($d = -0.12$, 95 % CI -0.13 to -0.11) on doping intentions. The more favorable factors associated with doping intentions and behaviors were legal supplements use, social norms, pro-doping attitudes. On the other hand, there was a notable negative correlation between morality and self-efficacy in abstaining from doping and doping intentions and behaviors.

The reviews revealed that anti-doping interventions should be based on empirical evidence and theory. In order to be effective anti-doping education should be systematic and repetitive. A focus should be placed on enhancing motivation to abstain from doping and promoting healthier alternatives. Other important variables to target in anti-doping interventions include knowledge of dietary supplements and doping substances, doping attitudes and morality. Anti-doping interventions should be customized to the target group's needs. The use of credible sources like parents or doctors to deliver preventative messages is considered effective. Anti-doping education should be sustained over time doping in order to be effective.

• **Health-related interventions**

Six studies were evaluated. One of them was meta-analysis (Anker et al., 2016) and 5 were reviews (Dunne et al., 2017; Golechha, 2016; Kite et al., 2018; Robinson et al., 2014; Seymour, 2018).

The Anker et al. (2016) meta-analysis revealed a moderate effect size ($r = .054$ (95% CI [0.033, 0.075])), suggesting that interventions were modestly effective in producing behavior change on health-related issues. The analysis of the studies in reviews indicated that effective interventions should promote co-creation with end-users and social marketing promotion strategies. In addition, local requirements, interests, and resources should be taken into account. Health communication campaigns should employ a variety of channels, including at least one mass media channel. The SMART goal framework is useful in producing behavior change. Habit modification should be an important objective of health interventions is an important aim to be achieved. In addition, the population capacity preparedness to produce a change should be considered while implementing health-related interventions.

• **Social marketing campaigns**

Fourteen studies were evaluated. Two of them was meta-analysis (Green et al., 2019; Vahedi et al., 2018) and 12 were reviews (Almestahiri et al., 2017; Burchell et al., 2013; Carins and Lundle-Thiele, 2014; Chen & Wang, 2021; Truong, 2014; Dunlop et al., 2016; Evans et al., 2014; Korda & Itani, 2013; Kubacki et al., 2015; Luca & Suggs, 2013; Tobey et al., 2014; Xia et al., 2016).

The results of the meta-analyses indicated that media literacy interventions can increase media literacy skills (Hedge's $g=.417$, [95% CI, .29-.54]), cognition towards risky health behaviors (Hedge's $g=.100$ [95% CI, .01-.19]) (Vahedi et al., 2018). In addition, social marketing campaigns can have a positive effect on several variables of behavior change (Green et al., 2019). The analysis of the studies in the reviews revealed that social marketing interventions can achieve positive outcomes when based on sound theoretical grounds. Social marketing campaigns should consider the societal and ecological factors that typically influence human behavior. Social cognitive theories, behavior change theories, the 4Ps and the 7 features of social marketing have been consistently proposed as theoretical frameworks that can enhance the effectiveness of social marketing campaigns. Social media have been proposed as a powerful means of mobilize people and producing behavior change. Still, the target population should become media-literate in order to effectively identify and absorb the preventive messages. Social marketing campaigns are expected to be more effective when include strategically incorporated normative messages, participation incentives, games and socializing, avoid fear appeals, and highlight the benefits of the desired behavior.

DISCUSSION

The present report reviewed existing literature in order to inform the development of the operational framework of the European Week of Clean Sport Campaign. A thorough literature review was performed that resulted in 29 studies relevant to doping, illicit drug use, health behavior and behavior change. Four meta-analyses and 25 review studies were included in the analyses. The results of the analysis provide valuable information for the construction and implementation of a social marketing campaign against doping.

The results suggest that anti-doping interventions need to be multifaceted and tailored to specific populations. It's crucial to acknowledge that previously interventions had a modest effect on reducing doping intentions. Current evidence suggests that newly developed interventions can produce moderate to high effects on doping intentions highlighting that they can be effectively used for doping preventions (Ntoumanis et al., under review). Effective interventions are based on sound theoretical frameworks and manipulate a set of psychosocial variables that are considered important for the decision-making process towards doping. Interventions could involve strategies like promoting legal supplement use, influencing social norms, and addressing pro-doping attitudes. Additionally, the complex interplay between morality and self-efficacy in abstaining from doping is crucial for designing effective anti-doping programs.

By building upon the existing evidence and following the International Standard for Education (ISE), there are several points guaranteeing successful anti-doping campaigns such as promoting, safeguarding, and maintaining the ideals of fair competition, deterring doping practices, and reducing the risks associated with doping among athletes or individuals engaged in physical exercise. The comprehensive approach aims to address doping at various levels. These campaigns should target various social groups, including recreational athletes, competitive athletes, as well as their Athlete Support Persons (ASP). Additionally, it is crucial to involve sport stakeholders, coaches, and personal trainers in grassroots and recreational sports.

The analysis of the health related interventions revealed that behavior change in this domain can be achieved, albeit modestly. Importantly, the success of these interventions hinges on their

design and implementation. Co-creation with end-users, which involves participation of the target population in the development of interventions, ensures that the strategies resonate with their needs and preferences. Social media strategies can amplify the reach and impact of these interventions. In addition, it is essential to customize interventions to suit the specific circumstances of the local setting, taking into account the resources that are available, and acknowledging the level of preparedness of the people for implementing change. Significantly, the incorporation of the SMART objectives framework and the prioritization of habit modification can offer a systematic strategy to attaining behavior change. In conclusion, the utilization of various communication channels, such as mass media, has the potential to augment the distribution of health-related messages. It is important to note that the health risks of the behavior were not strongly discussed in the studies. Taking into consideration that health is among the most important pillars of anti-doping, future studies should address this as well in order to provide meaningful information about how the health hazards of doping could be transferred to athletes through anti-doping education.

The analysis of the meta-analysis and reviews on social marketing campaigns revealed their potential to influence for behavior change. Media literacy interventions, when applied effectively, can significantly enhance skills and cognitive processes related to risky health behaviors. This underscores the importance of equipping individuals with the tools to critically assess and engage with media messages. Moreover, the success of social marketing campaigns is contingent on their theoretical foundation. The incorporation of theories like social cognitive theories and behavior change models can provide a structured framework for campaign design. Understanding the societal and ecological factors influencing behavior is essential for tailoring campaigns to specific contexts. Additionally, utilizing a mix of strategies, such as normative messages, participation incentives, and socializing elements, can enhance the impact of these campaigns.

According to Grier and Bryant (2005), the effectiveness of communication campaigns rooted on social marketing principles can be enhanced when the campaign's specific actions are customized to cater to the unique requirements of the target groups. Furthermore, in connection with the preceding argument, it is imperative to enhance the ability of anti-doping

communication campaigns in addressing matters pertaining to diversity and inclusion. Moreover, it is important to consider the variations in anti-doping practices, values, public attitudes, and norms towards doping across different countries and cultures (Efveström et al., 2016; Petroczi et al., 2021; Woolway et al., 2021).

In conclusion, the findings of the analysis collectively highlight the need for comprehensive, evidence-based, and theoretically grounded interventions. Effective interventions require a thoughtful approach that considers the complexities of human behavior, societal influences, and individual psychosocial factors. By understanding these nuances, practitioners and policymakers can develop targeted strategies that are more likely to succeed in achieving behavior change across these domains. Furthermore, ongoing research and evaluation are essential for refining and advancing intervention strategies in the future.

Best Practices for Informing a Campaign against Doping

Based on the analysis of the studies described above the following best practices have been identified and proposed for an effective social marketing campaign against doping.

1. The campaign should target the athlete and the ASP. Parents, coaches, doctors and support personnel can also be targeted by the campaign.
2. The objectives of the campaign for athletes and ASP should be complementary and synergistic.
3. The campaign should be delivered in the wider sport and local community and not be restricted to sport clubs and federations.
4. In order to optimize the impact, it is advisable for the campaign to employ a comprehensive array of media methods and formats in a cohesive manner that aligns with the communication plan.
5. The campaign should promote relevant communication messages into the sport organizations (e.g., sport federations), professional groups (e.g., coaches associations), and government bodies (e.g., Ministry of Sport, Ministry of Health, Ministry of Education etc).
6. The campaign must be implemented for a period of time sufficient to reach a wide audience and achieve an effect on the target groups.
7. The campaign should reiterate its core messages. Through repetition an augmented

exposure and accessibility can be achieved. Through the use of diverse means and social media platforms a reach to wider audiences can be achieved.

8. The campaign messages should target psycho-social risk and protective factors for doping use (e.g., moral beliefs, health risk concerns, social norms against doping, resistance efficacy, performance and physical appearance worries) in different contexts (e.g., recreational and elite/competitive sport).
9. The campaign should focus on developing a “doping-free sport” mindset. The name, logo and graphics of the campaign should reflect the core message of the campaign.
10. Co-creation of the social marketing campaign messages with target groups may be beneficial to the effectiveness of the campaign.
11. Messages should be customized to the target groups in order to address the needs of each target group in terms of age, sport situation, and psychological profile. Still, messages should be suitable to wider target groups to increase their appeal and applicability.
12. The campaign should provide opportunities for target groups to actually engage in the desired behaviors (e.g., sign a petition).
13. Use of role models (e.g., elite athletes) can be effective in delivering the social marketing campaigns messages.
14. Focus on positively framed messages in balance with fear appeals, which can may be effective when presenting short term consequences (e.g., sanctions following a positive test; acute health risks).
15. The campaign messages should be presented in an appealing and accessible way.
16. It is recommended that messages employ language that is readily understandable to the target groups.
17. Messages discussing the health hazards of doping use should provide both qualitative expressions of the risk (e.g., many health problems) as well as quantitative expressions (e.g., percentage of athletes tested positive).
18. Messages addressed towards those who are not at risk for doping use should primarily concentrate on augmenting the significance of clean sport, as well as bolstering the athletes' self-efficacy to compete clean. Messages targeted towards those who are at risk for doping should prioritize the knowledge (e.g., sanctions, health hazards etc) and acquisition of skills (e.g., self-efficacy to resist temptation) that are essential for abstaining from doping.
19. Provide incentives and rewards for manifesting support to clean sport (e.g., signing petitions).

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TABLE 1: LIST OF STUDIES INCLUDED IN THE REPORT

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Ntoumanis et al. (2014)	Meta-analysis	Anti-doping intervention	63	Competitive and recreational athletes	High	Anti-doping interventions demonstrated a small but significant reduction in doping intentions; no effect was found for doping behavior. Task orientation, self-efficacy to resist temptations and anticipated regret were negatively associated to doping cognition and behavior, while ego orientation, controlled motivation, pro-doping attitudes, biased normative beliefs and body image issues were positively related.	Social cognitive variables serve either as risk or protective factors to doping and should be taken into account in anti-doping interventions.
Petroczi et al. (2014)	Literature review	Anti-doping intervention	36	High school and college athletes, general public	70%	Focused intervention tactics based on transtheoretical model and motivational interviewing better align the anti-doping message with the stages of the decision making about doping. Adolescents may be discouraged from using doping if they get preventative messaging from credible sources like parents or doctors, as compared to high-profile athletes. Announcements about the negative health consequences usually are not associated with long-term changes in behavior unless sustained over time.	Prevention strategies should be activity-based and emphasize participant engagement. Exposure to credible online sources improves health literacy in adolescents and enables them to access accurate information on doping risks beyond the intervention program.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Woolf (2020)	Literature review	Anti-doping intervention	Not reported	Not reported	45%	Programs should be based on empirical evidence and theory, providing explanation for outcomes. The collaboration with athletes for co-creating the educational material should be used with caution. Instead of only encouraging free conversation and self-discovery, anti-doping interventions should carefully train facilitators.	Programs should start early, be multi-faceted, involve multiple sessions and reinforcement, be peer-led, offer alternatives to doping use, develop refusal skills, involve parents, address normative perceptions, and be tailored to athletes' sport and career stage.
Sipaviciute et al. (2020)	Literature review	Anti-doping intervention	Not reported	Not reported	40%	Systematic and repetitive knowledge-based anti-doping education can be effective. Anti-doping education should address athletes' dietary supplement expectations.	Prevention programs should have theoretical background, and be continuously reviewed to improve.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Bates et al. (2019)	Literature review	Anti-doping intervention	23	Competitive and recreational athletes	80%	Interventions mostly focused on educational approaches, underpinned by the assumption that individuals are capable of making rational decisions. Enhancing motivation to abstain from substance abuse and promoting healthier alternatives, the likelihood of substance use would be diminished.	Anti-doping education can be combined with skills development, social norm reform, or goal setting. future intervention designers should consider that making decisions regarding health and behavior is not always driven by rationality and a straightforward evaluation of the associated costs and rewards.
Poppel (2021)	Literature review	Anti-doping intervention	30	Competitive and recreational athletes, adolescent and young athletes	85%	Benefit-oriented education can prevent youth from doping in sports. Doping prevention strategies provide short-term benefits. Differentiation and customization to the target group's needs are needed. Confrontation and social embedding may also benefit participants in affect-based and values-based education	Preventative approaches should encourage literacy and motivational personal development

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Mazzeo et al. (2020)	Literature review	Anti-doping intervention	15	Students, competitive athletes, coaches	50%	The reward effect constitutes a crucial element of doping. If all the gratifications athletes receive are associated with the utilization of drugs, it is possible that athletes may resort to drug use in the future.	Prior to developing an educational intervention, it is imperative to have an understanding of the underlying reasons behind the propensity of young individuals to engage in doping behaviors
Daher et al.'s (2021)	Literature review	Anti-doping intervention	20	School and college athletes	75%	Anti-doping interventions should improve knowledge of dietary supplements and doping substances, doping attitudes and intentions and actual doping use. Gender-specific education should be included in future interventions since education interventions may affect women and men differently. Anti-doping interventions should also be based on behavior change theories to better address the reasons for doping decision.	Multifaceted and customized anti-doping interventions are considered more effective

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Anker et al. (2016)	Meta-analysis	Health-related intervention	63	General public	High	Understanding the task's difficulty in regard to the intervention outcome should be acknowledged. Mass-mediated campaigns may have difficulties in achieving effects on self-efficacy.	Mass media campaigns may demonstrate significant influence in the promotion of knowledge.
Dunne et al. (2017)	Literature review	Health-related intervention	40	Youth	65%	The six youth engagement methods for intervention proposed include youth participation in program development, parental relationships, technology, health clinic, school, and social marketing. Importantly, the optimum approach of interventions may depend on local requirements, interests, and resources.	Intervention should foster youth participation and engagement in enhancing health and well-being.
Robinson et al. (2014)	Literature review	Health-related intervention	22	General public	55%	Health communication campaigns which employ a variety of channels, including at least one mass media channel, along with the marketing and distribution of health-related products at no cost or discounted prices, have been proven to be very effective.	Use of mass media enhances the effectiveness of a health communication campaign.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Seymour (2018)	Rapid literature review	Health-related intervention	Not reported	Not reported	40%	Effective campaigns include the strategic focus on specified goals, the establishment of valuable connections, the implementation of goals that are specific, measurable, attainable, realistic, and time-bound goals (SMART), the ongoing review of progress, and the alignment with both domestic and global policies. Interventions aimed at increasing awareness should effectively recognize and tackle barriers that exist at the individual, community, and systemic levels of healthcare provision.	Effective public awareness campaign should employ thoroughly tested materials and leverage diverse mass media platforms to cater to various age groups, cultures, and religious/spiritual viewpoints.
Kite et al. (2018)	Literature review	Health-related intervention	29	General public	65%	A lack of theory-based public health campaigns was observed, and research suggests that using theory is a good practice. The interventions studied showed that television dominated campaign delivery. In public health, social media and online advertising are increasingly employed, although their role is unclear.	For health interventions habit modification is an important aim to be achieved. Future interventions should be integrated into policy and environmental change prevention measures.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Golechha (2016)	Literature review	Health-related intervention	23	General public	65%	The utilization of social marketing and mass media interventions enables the dissemination of information to a wide audience, while motivational interviewing and peer education strategies target individuals. The effective implementation of health promotion programs for health promotion is influenced by two important factors: population capacity to address change and preparedness.	Prioritize the implementation of treatments that target social attitudinal and environmental changes over individual behavioral change.
Green et al. (2019)	Meta-analysis	Social marketing campaign	84	General public	Medium	Campaigns work well in places with limited resources, making them accessible to organizations and projects where government or commercial collaborations are absent. In addition, attitudes, social networks, supportive settings, and behavior change processes can influence behavior.	Interventions should integrate behavioral theory and social marketing into conventional strategies, utilize a combination of community knowledge, attitudes, and communication strategies to promote desired behaviors.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Vahedi et al. (2018)	Meta-analysis	Social marketing campaign	35	General public	Medium	Media literacy treatments have a modestly positive impact on the development of media literacy abilities. Changes in attitudes and intentions can lead to changes in behavior, but it is important to consider that other factors, such as peer norms or parental monitoring, can also play a role in shaping the prevalence of specific behaviors.	The development of media literacy skills is important as they help people make healthier decisions when confronted with media influences that may compromise their health.
Almestahiri et al. (2017)	Literature review	Social marketing campaign	14	General public	65%	Social marketing interventions can achieve positive outcomes, even when using a subset of the seven distinct and non-overlapping characteristics of social marketing.	Effective social marketing interventions should address the behavior change, audience research, segmentation, exchange marketing mix, competition, and theory features of a social marketing campaign.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Burchell et al. (2013)	Literature review	Social marketing campaign	Not reported	Not reported	40%	The rectification of norm misperception has been found to exhibit a positive correlation with behavioral enhancements in nearly all effective social normative advertising interventions.	Social norm activation campaigns will have greater success when normative statements are strategically incorporated inside relevant behavioral contexts.
Carins & Lunde-Thiele (2014)	Literature review	Social marketing campaign	34	General public	70%	Social marketing encompasses a variety of strategies (i.e., the seven features of a social marketing campaign). It is advisable to refrain from over-reliance on advertising or communication as these approaches have limited effectiveness compared to programs that utilize a broader range of marketing techniques. Social marketing campaigns should take into account the societal and ecological factors that impact human behavior.	Social marketing campaigns should include strategies for the seven features of a social marketing campaign.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Chen & Wang (2021)	Literature review	Social marketing campaign	544	General public	70%	Studies on social media use for health can be used to help practitioners communicate with patients, develop professionally, and do health research. Social media can mobilize people.	Use social media adds and functions, like sending reminders, registering for events etc, in order to help offline health-related services and activities
Truong (2014)	Literature review	Social marketing campaign	867	General public	55%	Governments, agencies, and organizations conduct various campaigns and interventions based on lay knowledge and assumptions. Evidence stressed the importance of "influentials" on social marketing campaigns.	Future campaigns should integrate theories and models and the seven features of social marketing.
Dunlop et al. (2016)	Literature review	Social marketing campaign	Not reported	Not reported	40%	Young people and their parents should learn about social media marketing in order to become media-literate consumers. Research is needed to discover what groups of teenagers would join and stay engaged with a campaign or intervention.	Social marketing interventions should include participation incentives, games, and socializing, encouraging target consumers to produce and upload campaign content on social media.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Evans et al. (2014)	Literature review	Social marketing campaign	32	General public	60%	The 4 Ps of marketing are used often, yet often do not explicitly state their 'price' strategy. Many of the studied programs use explicit branding to develop long-term relationships with product customers. Intentions, self-efficacy, and social norms are among the most influential variables and motivational interviewing and training were among the most successful intervention practices.	Successful programs should use individual behavior change and infrastructure enhancement to foster behavior change.
Korda & Itani (2013)	Literature review	Social marketing campaign	Not reported	Not reported	40%	Health promotion via social media is associated with a) audiences, messaging, and approaches, b) current trends in using social media tools, c) user-generated content, e) theory-based interventions, f) Evaluation of change, and g) scaling for greater impact	Social media campaigns should involve modern platforms, integrate theory, take into account participants demographics and anticipate evaluation measures.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Kubacki et al. (2015)	Literature review	Social marketing campaign	23	K12 children	50%	Effective strategies that mitigate the influence of competing behaviors should possess a comprehensive understanding of the alternative behaviors competing for the time and attention of the selected target audience. The provision of a tangible entity (such as money) or an intangible entity (such as time) is required concurrently in order to obtain an immediate advantage within an intervention.	Social marketing campaigns should encompass a variety of methods, using the fundamental elements of the 4Ps
Luca & Suggs (2013)	Literature review	Social marketing campaign	24	General public	60%	Behavior theories and models in social marketing can improve an intervention. Benefits include adaptable intervention design and evaluation tools for different contexts, target audiences, and health subjects.	Social marketing campaigns would benefit from using sound theoretical background and integrating the seven features of social marketing.

Study	Type of study	Topic of the study	Number of studies included	Sample characteristics in the included studies	Quality of study	Key findings of the study	Conclusion
Tobey et al. (2014)	Literature review	Social marketing campaign	Not reported	Not reported	40%	The best practices of a social marketing campaign include: a) a needs assessment, b) selection of social media sites, c) creation of a theory-based plan/intervention, d) integration of the social media team, and e) regular collection, track, and use of social media measurement data.	Social media can be a powerful means for the promotion of marketing messages.
Xia et al. (2016)	Literature review	Social marketing campaign	99	General public	55%	The campaign strategies can significantly influence the interventions' success. Instead of using fear appeals to highlight the hazards of current behavior, managers should use core product to highlight the benefits of the desired behavior, which increases motivation to adopt it.	Social marketing campaigns teach target audience's behavioral skills to overcome obstacles and develop objectives and plans.



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