WORLD ANTI-DOPING AGENCY

play true

RESEARCH PROJECT REPORT

Chief Investigator: ROWENA NAIDOO, PhD

Research Assistant: THANUJJ KISTEN

Project Title: Developing and Evaluating the C.R.E.S.T Anti-Doping Protocol

Organisation: University of KwaZulu-Natal

October 2020

Developing and Evaluating the C.R.E.S.T Anti-Doping Protocol

Introduction

Due to the ever-increasing pressure on athletes to perform, and the increased competitiveness of sports, many athletes are adding pharmacological agents, such as performance enhancing substances (PES) and supplements, to their training and nutritional plans to achieve improved performance levels (Nolte, Steyn, Krüger et al., 2014).

There are a limited number of intervention studies that address the increased use of PES in athletes. To date only one study has implemented an anti-doping intervention programme amongst adolescent athletes, i.e. the Hercules programme (Sagoe et al., 2016).

For many years, researchers have classified changes of behaviour as linear and deterministic in nature; whereas changes in behaviour can now be thought of as occurring in quantum leaps and chaotically (Resnicow & Vaughan, 2006). Hence, when the aim of this study was developed, the researcher chose Chaos Theory as a valid framework to study the complex processes of behavioural change.

Aim

to develop an anti-doping protocol

Objectives

- to develop an anti-doping protocol for u-17 soccer players, guided by Chaos theory, and with the aid of specialists in the fields of physics, psychology and sport science
- to determine the knowledge, attitudes and practices of u-17 soccer players regarding doping in sport, post the anti-doping protocol intervention

Methodology

Research design

The study used a mixed methods study design, using both quantitative (questionnaires) and qualitative (focus group discussions) methods. A quasi-experimental research design was employed to determine the effect of the intervention on behaviour change.

Population and Sample

The target population was u-17 male development soccer players in the eThekwini region, KwaZulu-Natal, South Africa. There are approximately 400 registered soccer league teams in the eThekwini region. Female teams were excluded as there are only social leagues.

A purposive sampling technique selected 10 teams and randomly assigned them to a control group and the anti-doping protocol group; hence, five teams per group.

Ethical considerations

Permission to conduct the study was obtained from the relevant authorities. Prior to the administration of the questionnaire, the focus group discussions and the implementation of the intervention, all participants provided parental assent, and assent was also obtained from the players themselves. Participants were informed that they were free to withdraw at any time without prejudice. Participation in this study was entirely voluntary. Each participant was allocated a number and alphabetical code to ensure that confidentiality and anonymity were maintained throughout the study. At the end of the study, the control group will be offered the opportunity to participate in the intervention programme.

Procedures and Protocol

Figure 1 outlines the research study procedures.

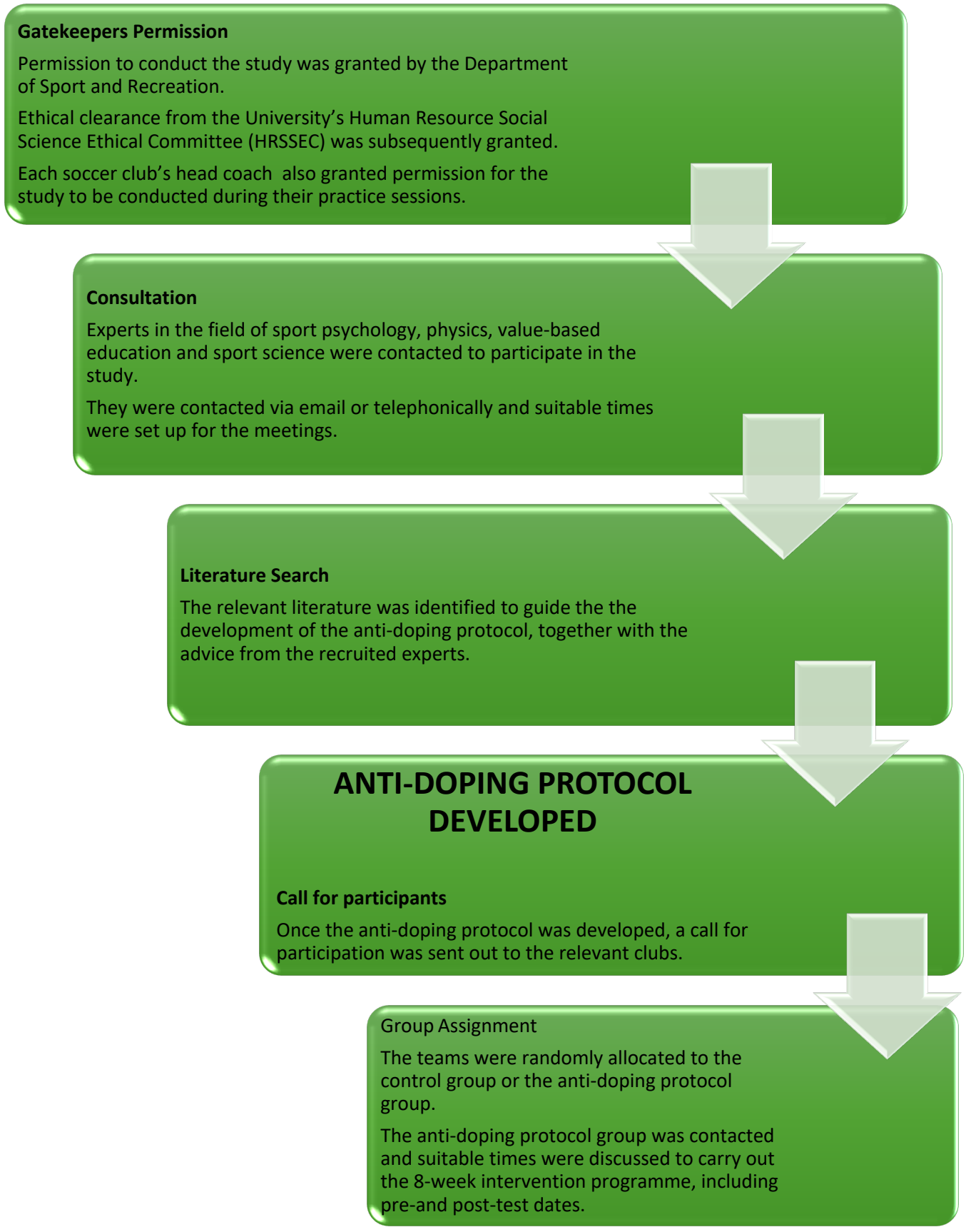

Figure 1: Research Procedures

Instrumentation

Questionnaires were administered and focus group discussions were conducted pre-and post-intervention.

Questionnaires

Questionnaire 1: Knowledge and attitudes to doping in sport

Questionnaire 2: A WADA quiz on doping knowledge

Questionnaire 3: The Athletic Coping Skills Inventory (ACSI)

Focus Group Discussions

Focus group discussions were conducted with the players by a trained research assistant. The questions focussed on the players' backgrounds, attitudes, perceptions and beliefs regarding consuming supplements; their practices when using supplements and their attitudes to practising doping in sport.

The Intervention

The intervention group participated in an eight-week programme, consisting of one 60-minute session per week. The control group continued with activities as per normal.

Statistical analysis

Various descriptive (means, frequencies) and inferential (chi-square, one sample t-test, analysis of variance) statistics were applied.

The analysis of the focus group discussions was carried out methodically by clustering themes that became apparent.

Results

The Development of the C.R.E.S.T Anti-Doping Protocol

The presentation of the results has been guided by the information collected and the advice received from the experts recruited in the fields of sport psychology, physics, value-based education and sport science who participated in this study. The C.R.E.S.T anti-doping protocol (Figure 2) was developed, based on the advice from the experts, as well as the literature consulted.

Figure 2: The C.R.E.S.T anti-doping protocol

The C.R.E.S.T acronym is derived from the following components:

C- **Coping techniques**: humour and time management

R- **Relaxation techniques**: deep breathing exercises and yoga

E- **Education**: a value-based education focus, including discussion on the harmful effects of doping, the consequences to doping and the ethical dilemmas of sport and anti-doping

S- **Skills**: various ball skills, including the most taps and tricks

T- **Training**: soccer-specific training drills

Each session included every component of the CREST protocol. Each component was approximately 10-15 minutes long.

Table 1 shows the programme for week one.

Table 1: Week 1 of the C.R.E.S.T intervention group

	TEAM1	TEAM2	TEAM3	TEAM4	TEAM5
WEEK1	**C** – A joke was based on Luis Suarez's bite on Ivanovic. **R** – Deep breathing exercises **E** – Education about what is considered doping; who are WADA and SAIDS (South African Institute for Drug-Free Sports) **S**- A simple ball skills drill **T**- A simple running drill	**R** – Deep breathing exercises. **C** – A joke was based on Luis Suarez's bite on Ivanovic. **E** – Education about what is considered doping, who are WADA and SAIDS **S**- A simple ball skills drill **T**- A simple running drill	**E** – Education about what is considered doping, who are WADA and SAIDS **C** – A joke was based on Luis Suarez's bite on Ivanovic. **R** – Deep breathing exercises. **S**- A simple ball skills drill **T**- A simple running drill	**S**- A simple ball skills drill **C** – A joke was based on Luis Suarez's bite on Ivanovic. **R** – Deep breathing exercises **E** – Education about what is considered doping, who are WADA and SAIDS **T**- A simple running drill	**T**- A simple running drill **C** – A joke was based on Luis Suarez's bite on Ivanovic. **R** – Deep breathing exercises **E** – Education about what is considered doping, who are WADA and SAIDS **S**- A simple ball skills drill

Taking into consideration Chaos Theory, the starting point of each session for each team was varied, but was constant for the duration of the intervention. For example, Team 1 began with the 'C – Coping techniques' for each of the eight weeks, but the remainder of the session components were varied.

The Evaluation of C.R.E.S.T Anti-Doping Protocol

There was significant improvement in the general perceptions of, and attitudes to, doping in sport across all teams in the C.R.E.S.T anti-doping protocol group, post-intervention. Furthermore, teams in the C.R.E.S.T anti-doping protocol group were more knowledgeable about prohibited supplements, as well as where to get information on doping in sport. There were significant changes in behaviour regarding the consumption of cannabis, alcohol, smoking and other prohibited substances before and after matches, as well as a better understanding of the consequences if caught doping in sport across all teams of the C.R.E.S.T anti-doping group, post-intervention. A significant improvement was found in the WADA quiz scores, which focused on the harmful effects of doping, as well as testing procedures for doping, across all teams in the C.R.E.S.T anti-doping protocol group post-intervention.

Post-intervention analyses of the focus group discussions corresponded with the findings from the questionnaires. Significantly, the need for educational programmes was a common theme that emerged in both the control and intervention groups. It was clear that the intervention group felt that combining educational information with the activities was a preferred method of learning and retaining information.

The influence of the Chaos Theory

The results from the WADA quiz and the ACSI questionnaire were used to determine whether Chaos Theory influenced each team's improvement, if any, in their knowledge of doping and coping mechanisms to deal with the psychological stressors of sport. Teams 1 and 5 showed a greater improvement than the other teams in the C.R.E.S.T anti-doping protocol group.

Conclusion

It is well-documented (Backhouse, Atkin, McKenna, 2007) that educational interventions improve perceptions and knowledge of doping in sport. However, there is lack of studies showing the effects of educational interventions on behavioural change. Furthermore, studies have found that the majority of an athlete's reasons for doping include the psychological and physiological stressors that are associated with sport. Therefore, interventions need to include mechanisms to help with these stressors.

The C.R.E.S.T anti-doping protocol produced improvements in the perceptions, attitudes and behaviour regarding doping in sport among u-17 soccer players. Furthermore, results from this study suggest that changing the starting point for an anti-doping intervention can contribute to more improved outcomes, supporting the premise that Chaos Theory is a valid theoretical framework for behavioural change.

References

Backhouse SH, Atkin A, McKenna J, & R. S. (2007). International literature review: Attitudes, behaviours, knowledge and education – drugs in sport: Past, present and future. Report to the World Anti-Doping Agency, 23(2), 240–246.

Nolte, K., Steyn, B., Krüger, P., & Fletcher, L. (2014). Doping in sport: Attitudes, beliefs and knowledge of competitive high-school athletes in Gauteng Province. South African Journal of Sports Medicine, 26, 81–86. Retrieved from http://www.scielo.org.za/scielo.php?pid=S2078516X2014000100005&script=sci_arttext&tlng=en

Resnicow, K., & Vaughan, R. (2006). A chaotic view of behavior change : a quantum leap for health promotion. International Journal of Behavioral Nutrition and Physical Activity, 7, 1–7. https://doi.org/10.1186/1479-Received

Sagoe, D., Holden, G., Nygaard, E., Rise, K., Torgersen, T., Paulsen, G., … Pallesen, S. (2016). strength training : The Hercules program. Performance Enhancement & Health. https://doi.org/10.1016/j.peh.2016.01.001