ANTI-DOPING EDUCATION PROGRAMME

Abstract

2.5.2018

Author(s)
Merita Bruun

Degree programme
Degree Programme in Sport Development and Management

Report/thesis title	**Number of pages and appendix pages**
IFF Anti-Doping Education Programme	**67 + 4**

The objective of this thesis is to plan an anti-doping education programme for the International Floorball Federation (IFF).

The paper will start with describing anti-doping education as a preventive strategy and the requirements for international sport federations that are emphasised in the World Anti-Doping Code that came into force on January 1st, 2015. It will also investigate the recent social science research and frameworks in the field of anti-doping and then look into the specifics of floorball and the history of doping in the sport.

Participatory education is utilised as the theoretical framework for developing the IFF anti-doping education programme. As the aim with this study is to develop the best possible anti-doping education programme for the main target group, the athletes entering the IFF Events, the empirical part focuses on collecting and analysing the input received from this group.

A mixed method approach is utilised in this study in order to obtain broad knowledge about the issue. The research design was a sequential explanatory design, as the quantitative method was conducted before the qualitative phase. The qualitative method was then used to get a deeper understanding of the quantitative results and to validate the findings of both methods.

The empirical part included two parts: an athlete survey for floorball players taking part in the Women's World Floorball Championships in December 2015 and a focus group interview for the IFF athletes commission members. The focus group interview was arranged in May 2016.

The main findings of the research show that there has been a lack of anti-doping education for floorball players. The research indicates that anti-doping education is needed in a wide range of topics such as prohibited substances and nutritional supplements, the athletes' right and responsibilities as well as testing and therapeutic use exemptions. Based on the research results, a new approach to anti-doping education has been developed and the IFF anti-doping education programme is planned based on that. The development areas relate to increasing cooperation with the national anti-doping organisations, to focus the education activities on younger athletes and prioritising new teams entering the IFF Events. Also targeting the countries where no national anti-doping education efforts exist should be a future priority.

Keywords
Anti-doping, Education, International Floorball Federation, WADA

Table of contents

1 Introduction

The International Floorball Federation (IFF) is the head organisation of world floorball with close to 70 member associations (68 members by March 2018). The IFF was founded by Sweden, Finland and Switzerland 12th of April 1986. IFF is a full member of the International Olympic Committee (IOC) since July 8th, 2011.

Protecting the sport and the clean athletes is one of the many tasks of the International Floorball Federation. In 2003 the IFF became a World Anti-Doping Code signatory and has implemented the World Anti-Doping Code ever since. The “Code” is the fundamental and universal document upon which the World Anti-Doping Programme in sport is based.

The anti-doping work, has during the recent years become a bigger priority of the organisation due to the complexity of the field and the growing demands. The anti-doping work of the IFF and other international sport federations involve focusing on testing and investigation, but more focus has recently been put on information and education. Recent development and research has shown that a focus on detection-deterrence methods limits the effectiveness of anti-doping programmes. Therefore, instead of focusing only on testing and investigations, the anti-doping organisations such as the IFF, should invest more on prevention strategies involving information and education. These strategies, should help protect the integrity of sport and all those athletes who do not dope. (Dvorak et al. 2014; Backhouse et al. 2016).

In the international sport federations, the anti-doping activities include test distribution planning, results management, anti-doping awareness and education activities. The revised World Anti-Doping Code, the “Code”, came into force January 1st, 2015 and with the Code, steps have been taken forward in emphasising the role of information and education as key elements of any prevention programme. For example, Article 18 of the 2015 Code, requires information and education to be mandatory elements of anti-doping organisations prevention programmes. The Code and the WADA Guidelines will act as the guiding documents for planning the IFF anti-doping education programme. (WADA Information/Education Guidelines 2016; World Anti-Doping Code 2015).

In addition, this study will look into the recent social science research within the anti-doping field and utilise these findings in developing the anti-doping education programme. Through participatory education planning, the aim is to develop the best possible programme for the IFF. The empirical part will therefore concentrate on collecting and analysing the input received from the anti-doping education target group, the athletes. The data

is collected by using mixed methods, when both quantitative and qualitative methods are used.

1.1 Background

There has been an urgent need to change the anti-doping strategy as it has proved that the focus on testing is not very effective and does not protect the clean athletes. Future efforts in the fight against doping should therefore be more heavily based on preventative strategies such as education. (Dvorak et al. 2014).

According to recent studies, focusing on only testing is also not economically viable for effective detection. For example, Aaron Hermann and Maciej Henneberg (2014) conclude in their research paper that the current system of anti-doping is, given the realities of the sporting world, ineffective at reaching the desired goals, which is to eliminate doping. These researchers also point out that should the current system of anti-doping remain, significant increases would need to be made in the testing levels; this in turn would require a significant increase in revenue for anti-doping collection and testing. This may be economically impossible and thus other solutions to tackling the problem of doping may need to be sought, outside of individual scientific tests.

The ineffectiveness and the costs of testing are some of the reasons behind the stronger emphasis on other preventive strategies, such as education. In addition, it is also the task of the anti-doping organisations that do test athletes, to take responsibility for educating these athletes. The athletes should for example know which substances are prohibited and their rights and responsibilities.

The information and education responsibilities of the anti-doping organisations in connection with positive doping cases have been discussed a lot lately. For example, the meldonium cases in 2016 have been a topic within and outside the anti-doping community. Meldonium was added to the World Anti-Doping Code Prohibited List on January 1st, 2016 and during the first months of 2016 several athletes, especially in Eastern Europe, got caught for using meldonium. Some of the athletes have claimed that they have not received enough information about meldonium being banned. Also, other recent cases when athletes might have inadvertently broken the anti-doping rules when using for example nutritional supplements that are banned, have raised the question of the anti-doping organisations' education responsibility (Adair 2016; Axon 2017; Butler 2017; Chinoko 2016; Harris-Fry 2017; UK Anti-Doping 2016; Hobson 2016).

The first ever values-based education conference, organised for the anti-doping community in October 2015, can also be considered as a clear step forward in emphasising the importance of education. The conference was organised by WADA in cooperation with the Canadian Centre for Ethics in Sport. After the discussions, all conference participants committed to adopting the following key resolutions (Values-based education conference 2015):

- WADA, National Anti-Doping Organisations, Regional Anti-Doping Organisations and International Federations must devote more financial and human resources to values-based anti-doping education programmes.
- Research must inform, guide and further enhance all education programmes.
- Anti-Doping organisations and researchers must continue to collaborate to further guide and enhance values-based education.
- Effective values-based education and prevention programmes must be implemented in order to significantly reduce doping in sport.
- National Anti-Doping Organisations and Regional Anti-Doping Organisations must evaluate their anti-doping education programmes and ensure that they reflect a values-based approach to enhance their effectiveness.

Based on a pilot-study conducted during the Men's World Floorball Championships 2014, when 316 athletes were asked if they had received anti-doping education, only a bit more than half of the athletes responded that they had received prior education. This number was by no means very satisfying as it meant that 47,5 % of the athletes participating in the top-level event in floorball had not received any anti-doping education though they had been subject to testing.

Following the recent development and the pilot-study, it then became quite evident that the IFF needs to put more focus in developing a research based anti-doping education programme that best serves its target groups and protects the clean athletes, thus making sure that the athletes that enter the IFF events are educated in the anti-doping matters.

1.2 The Purpose

The purpose of this study is to create the best possible anti-doping education programme for the International Floorball Federation. By doing this, the IFF's aim is to protect the clean athletes and meet the requirements set by the World Anti-Doping Code.

Testing athletes has been the most used doping prevention strategy by sport organisations. But recently this strategy has received criticism for being ineffective when used as the only prevention strategy to protect the clean athletes. Instead, education has now been pointed out as the key strategy to keep sport clean. The importance of anti-doping education has thus been highlighted more than ever before. The World Anti-Doping Code

that came into force on January 1st, 2015 also highlights education and now the Code signatories, such as the international sport federations, are starting to take more responsibility for educating their athletes in the different topics related to fair play in sport, anti-doping being one of the most important subjects. (World Anti-Doping Code 2015).

The purpose of this research is not to plan a very detailed education programme, with exact resources, materials, budgets and timelines etc., but rather to evaluate and decide upon the key principles and directions of the IFF's anti-doping education programme based on which a more detailed plan can be developed. The aim is to determine which athletes and support personnel the IFF's anti-doping education should target, when these target groups should receive anti-doping education, what kind of anti-doping education should be delivered and by whom. The goal should be that all athletes participating at the official IFF events would have received some prior anti-doping education before playing in their first IFF event. From the IFF's point of view, it does not matter which anti-doping organisation delivers the education. Therefore, the purpose of this study, is also to look into, how athlete anti-doping education would be best organised in cooperation with other anti-doping organisations.

This research is directly work related, as the researcher is responsible for all anti-doping matters of the International Floorball Federation. By going through this process of gathering and evaluating data and developing the IFF anti-doping education programme, the researcher and the organisation will have a clear picture of what the anti-doping education programme should include, which athletes should be targeted and how the education should be delivered and by which organisation(s).

1.3 The Objectives

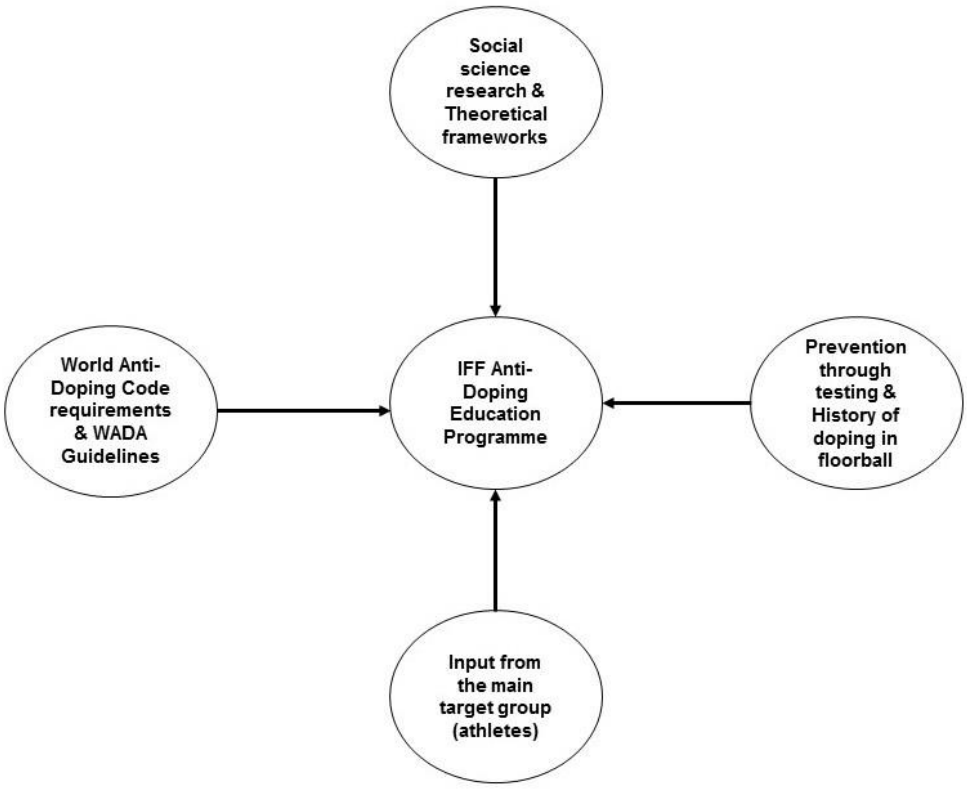
The aim of this thesis is to create the anti-doping programme for the International Floorball Federation. In order to reach the purpose and objectives, this study first looks into what the social science research within the field has to offer for developing the education programme.

As the target is to develop an anti-doping education programme for a specific target group, the floorball players, especially the athletes entering the IFF events, much focus is put on gathering data from this target group. One of the objectives is therefore, to involve the athletes in the process. By letting the athletes have their say, the aim is to collect valuable input but also to get the buy-in from the athletes. The utilisation of participatory education planning is therefore well justified.

This thesis will:

- Introduce the theoretical frameworks used for anti-doping education as well as the results from recent social science research and evaluate the applicability of these from the IFF's perspective
- Utilise the different WADA guidelines and follow the requirements of the World Anti-Doping Code 2015
- Present the other prevention strategies such as testing in floorball and evaluate the risk of doping in the sport
- Gather and analyse the opinions from the athletes who are the main target group
- Develop the IFF anti-doping education programme based on the above-mentioned data and input

Figure 1. IFF Anti-Doping Programme Process Model



2 World Anti-Doping Code and Code Signatories

The World Anti-Doping Code is the fundamental and universal document upon which the World Anti-Doping Programme in sport is based. The purpose of the Code is to advance the anti-doping effort through universal harmonisation of core anti-doping elements. It is intended to be specific enough to achieve complete harmonisation on issues where uniformity is required, yet general enough in other areas to permit flexibility on how agreed-upon anti-doping principles are implemented. The Code has been drafted considering the principles of proportionality and human rights (World Anti-Doping Code 2015).

Ever since the first Code has been in force, 1st of January 2004, the Code has proven to be a powerful and effective tool in the harmonisation of anti-doping efforts worldwide. Sport organisations within the following categories have accepted the Code and are Code signatories:

- Olympic Movement
- Government-Funded Organisations
- Organisations outside the Olympic Movement

(World Anti-Doping Agency)

The purposes of the World Anti-Doping Code and the World Anti-Doping Programme which supports it are:

- To protect the Athletes' fundamental right to participate in doping-free sport and thus promote health, fairness and equality for athletes worldwide, and
- To ensure harmonised, coordinated and effective anti-doping programmes at the international and national level with regard to detection, deterrence and prevention of doping.

(World Anti-Doping Code 2015)

2.1 World Anti-Doping Code and the Spirit of Sport

Anti-doping programmes seek to preserve what is intrinsically valuable about sport. This intrinsic value is often referred to as "the spirit of sport." It is the essence of Olympism, the pursuit of human excellence through the dedicated perfection of each person's natural talents. The spirit of sport is the celebration of the human spirit, body and mind, and is reflected in values we find in and through sport, including:

- Ethics, fair play and honesty
- Health
- Excellence in performance
- Character and education
- Fun and joy
- Teamwork
- Dedication and commitment
- Respect for rules and laws
- Respect for self and other Participants
- Courage
- Community and solidarity

(World Anti-Doping Code 2015)

Doping is fundamentally contrary to the spirit of sport. To fight doping by promoting the spirit of sport, the Code requires each anti-doping organisation to develop and implement

education and prevention programmes for athletes, including youth. (World Anti-Doping Code 2015).

2.2 Anti-Doping Organisations and Collaboration

All organisations such as International Olympic Committee, International Paralympic Committee, International Federations, National Olympic Committees and Paralympic Committees, Major Event Organisations, and National Anti-Doping Organisations are collectively referred to as anti-doping organisations. Anti-doping organisations are responsible for adopting, implementing or enforcing anti-doping rules within their authority as set by the World Anti-Doping Code. (World Anti-Doping Code 2015).

The IFF is one of these anti-doping organisations and has signed the World Anti-Doping Code. According to the World Anti-Doping Code (2015) each signatory shall establish rules and procedures to ensure that all athletes or other persons under the authority of the signatory and its member organisations are bound by and compliant with World Anti-Doping Code anti-doping rules. In addition, each signatory shall make sure that appropriate consequences are imposed on those athletes or other persons who are not following these rules.

The anti-doping organisations differ a lot in regards of missions, core business, size, resources, countries and languages. National anti-doping organisations' activities include mostly anti-doping activities whereas anti-doping is not the core activity of an international sport federation, even though anti-doping related work has been constantly increasing. This growing demand for more focus and resources to be put on anti-doping work requires more cooperation between the different anti-doping organisations.

Houlihan (2008, p. 69) has also pointed out that the resources of the IOC, the international sport federations and the governments and their national anti-doping organisations need to be combined if success is to be achieved. But there are still challenges both on the national level as there are countries without any national anti-doping organisation and on the international level when there are not enough resources to fulfil all of the required anti-doping duties.

Cooperation between anti-doping organisations is also something that has been emphasised more by the World Anti-Doping Agency. In 2016, the World Anti-Doping Agency for the first-time published guidelines for optimising collaboration between different anti-doping organisations. These guidelines point out that for anti-doping organisations to operate

the most effective and efficient anti-doping programmes, international federations and national anti-doping organisations must work closely together to pursue the same goal. And when resources today, both financial and human, are limited, the resources must be utilised in the best possible way to ensure that the programmes being delivered are sustainable and as wide-reaching as possible. (WADA Guidelines for Optimizing Collaboration Between International Federations and National Anti-Doping Organizations 2016).

Joint collaboration between IFF and national anti-doping organisations is also needed in the field of anti-doping education. Especially small international sport federations such as the IFF, with no employee working full-time with the anti-doping matters, need partnerships with other anti-doping organisations to secure that all athletes participating in the IFF events receive anti-doping education.

The WADA guidelines point out that cooperation is also needed to avoid duplication of information in education and prevention programmes for doping-free sport. The guidelines also say, that when taking the available resources into account, the international federations should concentrate on implementing event-based education activities for both elite and junior athletes, in cooperation with national anti-doping organisations and national member associations. Furthermore, the international sport federations should engage and oblige their national member associations to implement and/or cooperate in the implementation of anti-doping education programmes with the national anti-doping organisations. (WADA Guidelines for Optimizing Collaboration Between International Federations and National Anti-Doping Organizations 2016).

To evaluate how the IFF's cooperation with the national anti-doping organisation and the national member associations is best organised in order to guarantee that the athletes entering the IFF events are educated in the anti-doping questions, is one of the targets of this research.

3 Anti-Doping Education

Based on recent studies, the anti-doping organisations have today a clearer picture of what the most effective approaches to tackling doping in sport are. Even though there is still a lack of research in the field of evaluating education interventions, the anti-doping organisations are becoming more committed to devoting human and financial resources towards education in order to enhance the effectiveness of the global anti-doping programme. (Backhouse et al. 2016).

Therefore, doping prevention through education should be more prominent and an integral part of all anti-doping efforts. This means that there needs to be more focus on providing valuable information to the athletes in addition to teaching values, which strengthens the athletes' ethical decision-making ability throughout their sporting careers. (Backhouse et al. 2016).

The IFF's anti-doping activities have previously been focusing mostly on testing at the IFF events as well as out of competition testing, but recently the focus has also shifted towards delivering both information and education. Still the IFF has not had a clear enough picture of what education is in fact needed. Therefore, the aim of this paper is also to clarify the needs of the athletes and to develop an anti-doping education programme based on their input.

The World Anti-Doping Agency has also published guidelines to stakeholders for planning and implementing information and education programmes. The WADA document separates information programmes from education programmes. An information programme is described to provide factual knowledge (what people should know) within a specific, relevant context that is immediately accessible to the target group/end user. The aim of any information programme should be to ensure that answers to questions can be found easily and quickly by an end user to support any decisions they may make. Examples of information actions as part of an information and education programme can for example include: awareness campaigns, booklets, interactive games/quizzes, leaflets, lecture-style presentations, outreach initiatives, posters, smartphone apps, videos, website resources. (WADA Information/Education Guidelines to Prevent Doping in Sport, p. 5).

According to the WADA Guidelines, education programmes should concentrate more on fostering anti-doping behaviours. An effective education programme caters to specific variables that lead to doping behaviours specific to the target population and includes interactive activities. An education programme should also aim at developing core life skills and runs over a period of time, or at least includes a follow up session. It promotes multimodal communication, with a consistent message coming from different sources: e.g. coaches, parents, schools, and sports organisations. The development of an education programme should also include identification of:

- Short-term goals (What do we want to achieve with each activity?)
- Long-term goals (What do we want to achieve by the end of our program?)
- Timeframe (When do we want to accomplish this?)
- Target groups (Who is our audience?)
- Key messages (What do we want to get across to our audience?)

(WADA Information/Education Guidelines to Prevent Doping in Sport, p. 5).

In real life, it is quite hard to separate anti-doping information- and education programmes. An outreach session or lecture-style presentation can include interactive activities, which then can be considered education rather than information. The interactivity of a session depends also on the target group and the participants' activity. Therefore, this study and the final IFF anti-doping education programme, will not make such a distinction between anti-doping information and education, but the final programme will aim at including both information and education activities.

Barrie Houlihan (2008, p. 63-65) has also made a distinction between anti-doping education and information. According to him, the provision of information is generally a one-way process and is delivered in a standard format whereas education is generally a two-way or collective process. Education is also usually designed for a particular target group and the organisation delivering the education should consider what type of education is likely to be effective. Houlihan also stresses the fact that education programmes should be realistic about what can be achieved.

The IFF anti-doping education programme takes Houlihan's points into consideration and the programme is therefore built in cooperation with the primary "target group", namely the athletes. The prior knowledge of the athletes as well as their wishes and expertise on how to best deliver anti-doping education are the basis of this study. In addition, the IFF needs to be realistic about what it can achieve with only limited resources available and how these limited resources can be best utilised to reach the desired outcome.

3.1 Education in the World Anti-Doping Code

The field of anti-doping has entered a new era with the revised World Anti-Doping Code that came into force in January 2015. The 2015 Code requires each Anti-Doping Organisation to develop and implement education and prevention programmes for athletes, including youth and athlete support personnel. (World Anti-Doping Code 2015).

The 2015 Code states that all signatories, IFF being one of them, shall within their means and scope of responsibility and in cooperation with each other, plan, implement, evaluate and monitor information, education and prevention programmes for doping-free sport. (World Anti-Doping Code 2015).

This is how the focus on education has moved from Should to Shall comparing the 2009 Code with the 2015 Code (World Anti-Doping Code 2009; World Anti-Doping Code 2015; Significant Changes Between the 2009 Code and the 2015 Code):

- The programmes ~~should~~ shall promote the spirit of sport in order to establish an environment that is strongly conductive to doping-free sport
- Prevention programmes ~~should~~ shall be primarily directed at young people, appropriate to their stage of development, in school and sports clubs
- Athlete support personnel ~~should~~ shall educate and counsel athletes regarding anti-doping policies and rules

Clarification is offered in the following way:

"Information programmes should focus on providing basic information to athletes as described in article 18.2. Education programmes should focus on prevention. Prevention programmes should be values-based and directed towards athletes and athlete support personnel with a particular focus on young people… " (World Anti-Doping Code 2015, p. 96).

3.2 Anti-Doping research and theories

In order to plan the best possible education programme for the International Floorball Federation, this paper will also take a look at what different theories and recent research within the field of anti-doping have to offer.

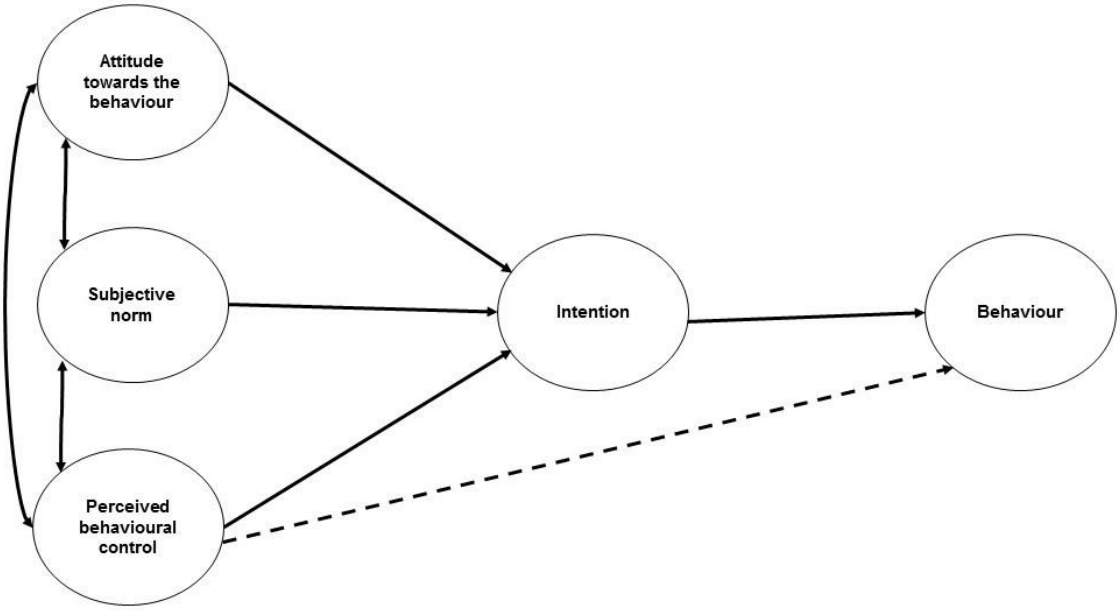
This section will start with a short presentation of the Theory of Planned Behaviour and then look more deeply into the Sport Drug Control Model and the Holistic Athletic Career Push Pull Anti-Push Anti Pull framework. The section is then concluded by presenting the most recent research within the field of anti-doping education and discussions on how these findings could be taken into consideration when planning the IFF anti-doping education programme.

Theory of Planned Behaviour

In the past, researchers have tried to understand behaviour in general and the use of doping specifically, using behavioural theories such as the Theory of Planned Behaviour (TPB). The TPB states that behaviour is best predicted by intention, which in turn is

influenced by the attitude a person has towards a certain behaviour, the subjective norms, and the perceived control (Ajzen 1991, p. 206; Wylleman et al. 2016, p. 43).

Figure 2. Theory of Planned Behaviour (Ajzen 1991, p. 182)



In this framework intention, perception of behavioural control, attitude toward the behaviour, and subjective norm each reveals a different aspect of the behaviour, and each can serve as a point of attack in attempts to change it. (Ajzen 1991, p. 206-207).

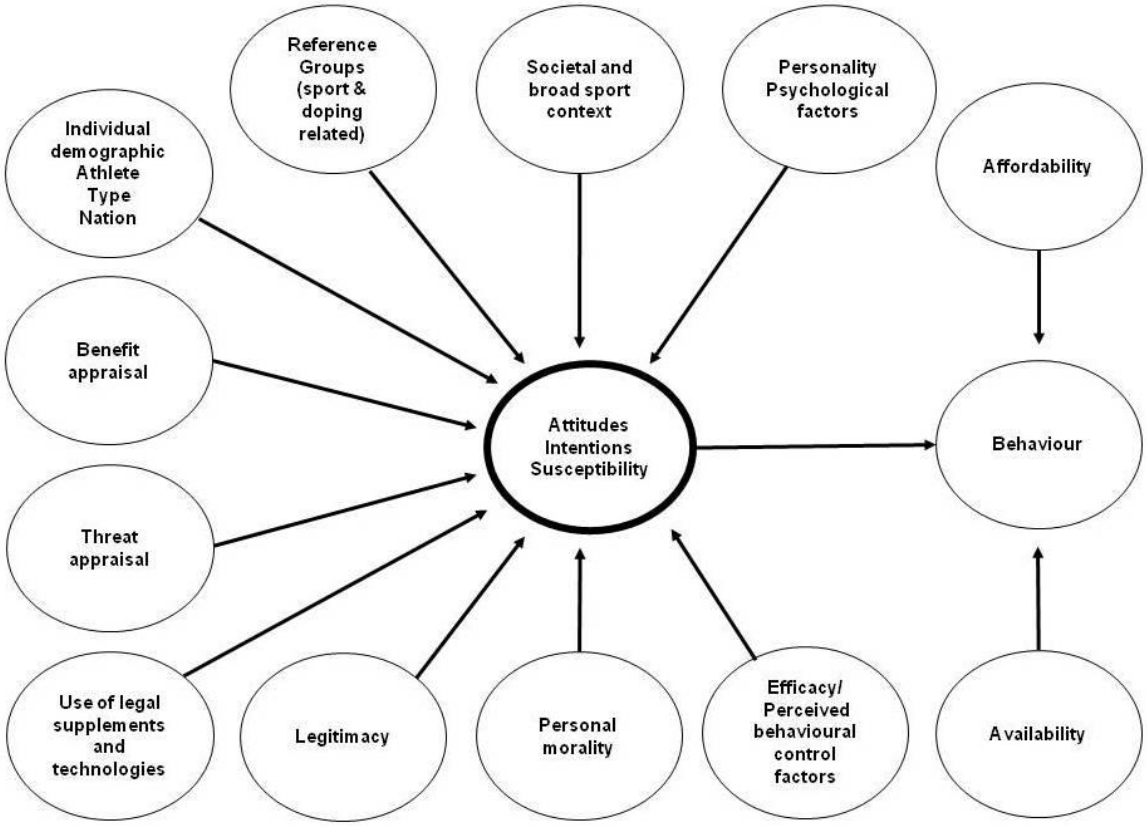
However, the decision to start using doping is a very complex one (e.g. Collins et al. 2012; Ntoumanis et al. 2012) and there are several different factors influencing each other at different points in time and all contributing to the decision whether to use doping. According to for example Wylleman et al. 2016 (p. 44) not all factors effecting the decision can be easily placed when using the TPB model.

From an international sport federation's perspective, the TBP model is also not that useful as it focuses more on the individual and not that much on factors that the federation is more likely to have an impact on. When preparing an anti-doping education programme for the IFF, it is of course of more interest to have a look at what the international federation can achieve through its education activities. Therefore, this paper will take a closer look at two other frameworks, the Sport Drug Control Model and the Holistic Athletic Career Push Pull Anti-Push Anti-Pull framework.

The Sport Drug Control Model

The Sport Drug Control Model aims to explain the intentions to dope from a more ecological perspective, emphasising both the individual- and the environmental factors. The model identifies 10 key factors that influence and create the intention of doping in sport and two market factors (availability and affordability) that facilitate the moment when an athlete may start doping. The influence of these factors may vary by athlete level, type of sport and country. A good prevention programme should identify the strength of each factor in a preliminary research phase to identify the factors that need to be "treated." (Donovan 2015; WADA Information/Education Guidelines to Prevent Doping in Sport, p. 25).

Figure 3. Sport Drug Control Model by Donovan (2015)



According to the Sport Drug Control Model (Donovan 2015) there are both individual factors and environmental factors that influence the attitudes, intentions and susceptibility of the athletes to use doping. Some of the factors, and mostly the environmental factors, are of more interest for an international sport federation as the federation may have a possibility affect them.

Athletes are for example evaluating the threats and appraisals and the perceived likelihood of sufficient performance enhancement to achieve desired benefits. Huge rewards, such as financial returns, can therefore become risk factors when considering the likelihood of doping. In floorball, when there is currently not much money involved, the financial benefits cannot be considered as motivating factors. But as Donovan (2015) has pointed out, also fame and recognition can for some athletes be perceived as benefits that motivate to dope.

The perceived health effects, perceived likelihood of being tested or of the drug being detected as well as the perceived severity of consequences of positive tests are examples of threat appraisals. (Donovan 2015). When taking this into account from an anti-doping education perspective, it would then be of importance to educate the athletes, so that they know that an effective testing programme exists and more importantly, that they know their responsibilities and the negative consequences if being caught for doping.

In addition, the reference groups can make a huge difference. The opinions with respect to doping of the individuals and groups whose opinions matter to the athlete can make a difference. (Donovan 2015). In team sports, such as floorball, the team-mates but also the team staff can be reference groups of importance and therefore future attention should also be put on emphasising and promoting anti-doping attitudes amongst the athlete entourage.

Another aspect worth paying attention to in an international federation is the legitimacy of the activities. People obey what they consider to be just laws and where the authority introducing and enforcing the laws is perceived to have the right to dictate such. (Donovan 2015). In other words, the anti-doping organisations need to get the buy-in from the athletes, so that the athletes understand why activities such as testing takes place. The athletes should trust the anti-doping programmes and that they are run to protect the clean athletes. The key is to ensure that the athletes understand why the rules are in place and what the rules mean, and this can be done through information and education.

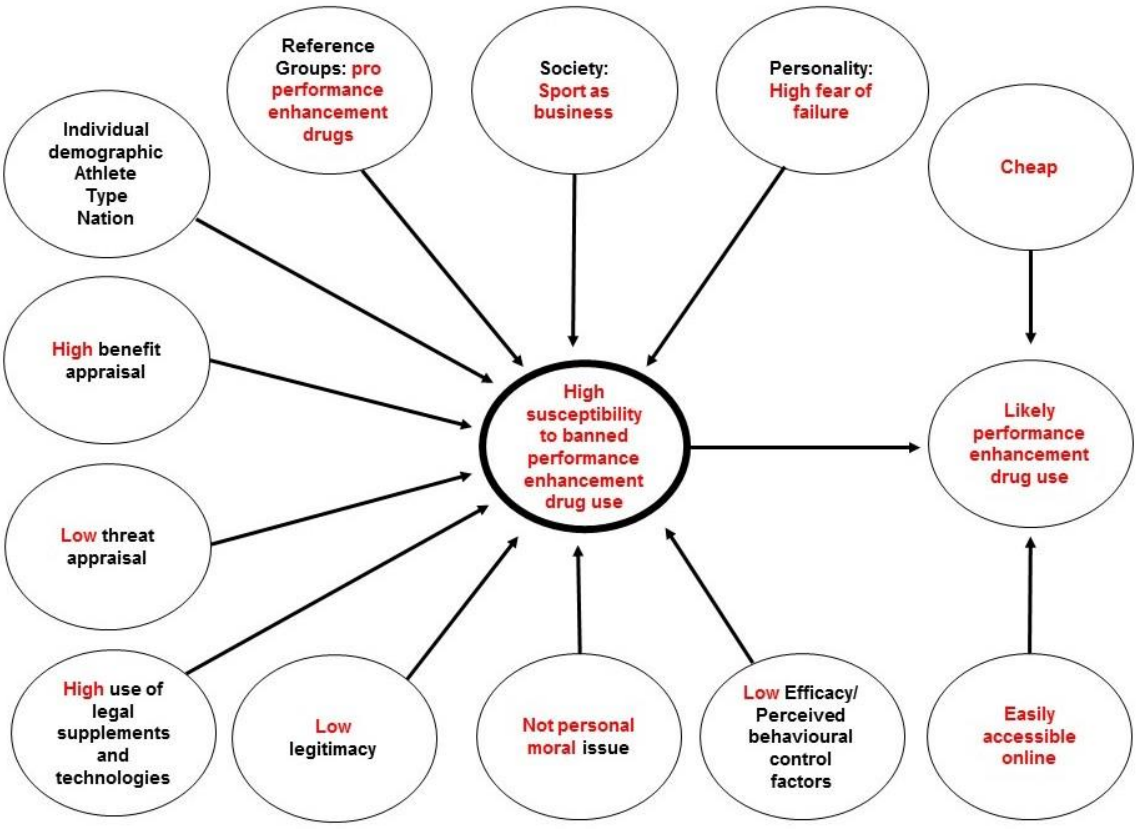
The societal and broad sport context also makes a difference. The anti-doping organisations should themselves make sure that their activities are legitimate (Donovan 2015). Many sports and nations, such as for example athletics, cycling, skiing, Russia, but also to some degree Great Britain, Kenya and Norway, are currently facing a low-point in their fight to combat doping problems which is comparable with the state of cycling at the time of the Festina scandal in 1998. (Young 2016; Lindqvist 2018, p.18).

When many anti-doping organisations are not following the rules themselves, this might increase the distrust by the athletes and the public, which may even create a doping culture within the sport or country. In floorball, we therefore need to make sure that the activities are in-line with the World Anti-Doping Code and that we only cooperate with organisations who also follow the Code. Donovan (2015) has also pointed out that when sport becomes business in society, this is a risk factor for increased use of performance enhancing drugs.

Of course, the personality factors also influence behaviour. Some personality types are more likely than others to be motivated by different rewards of success, some personality types are more likely than others to be vulnerable to various reference groups' pressure and some personality types are more likely than others to be susceptible to using all sorts of potentially performance enhancing methods (Donovan 2015). But from an international federation's perspective it is quite hard to influence the athletes' personalities, so therefore this paper will not go into this in more detail.

Donovan (2015) has also presented a framework with summarises and explicitly highlights the above-mentioned risk factors:

Figure 4. Applying the Sport Drug Control Model Adapted from Donovan (2015)



The risk factors above will be presented and discussed in more detail together with another framework, the Holistic Athletic Career framework combined with the Push Pull Anti-Push Anti-Pull framework, as both models include many similar findings that are worth to be considered when planning the IFF anti-doping education programme.

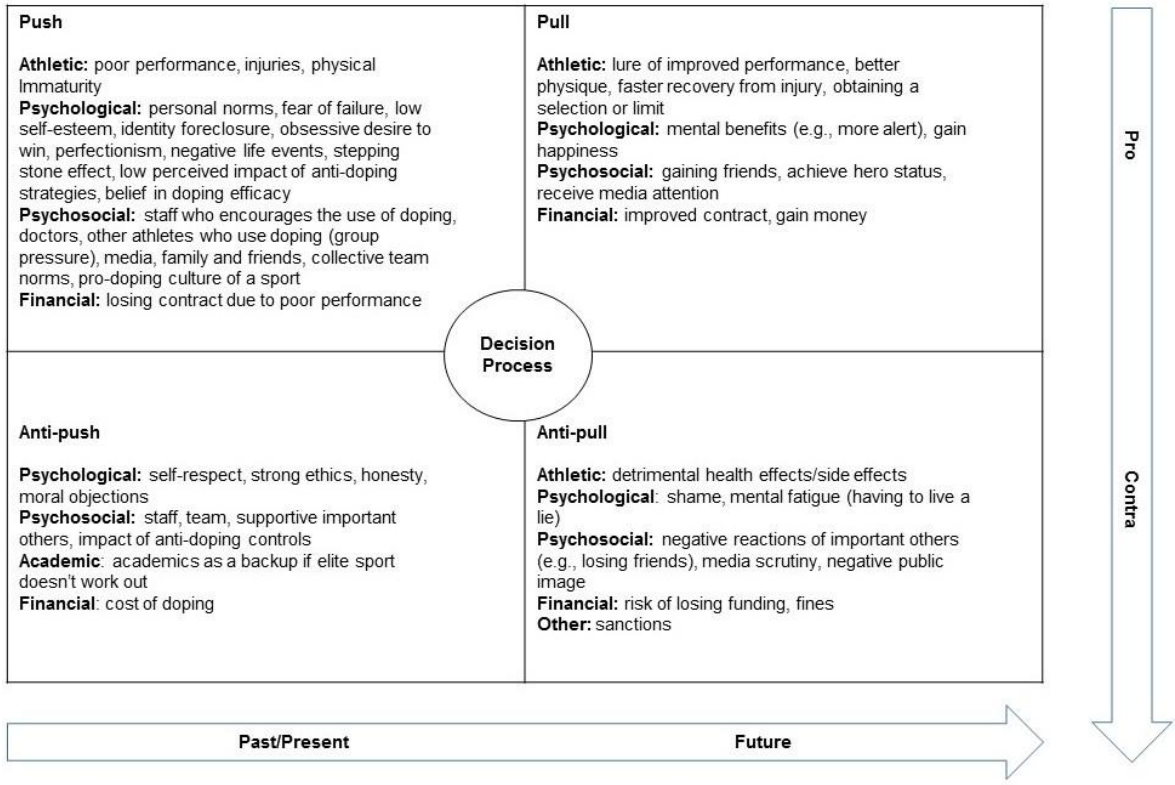
Holistic Athletic Career framework and the Push Pull Anti-Push Anti-Pull framework

Wylleman et al. (2016) has conducted a study that looks to identify key decision-making factors that can lead an athlete to dope or stay clean at critical points in their athletic career. It uses the Holistic Athletic Career (HAC) model and the Push Pull Anti-Push Anti-pull framework to illustrate clearly, what influences athletes use of doping through different developmental levels (athletic, psychological, social, academic and financial) along the pathway of their career.

The HAC model provides (a) a developmental perspective by considering the whole athletic career from the beginning until the end (including the post-athletic career), as well as (b) a holistic perspective by identifying transitions athletes could face throughout this development at five different levels, namely the athletic, psychological, psychosocial, academic/vocational, and financial level. (Wylleman et al. 2016, p. 6).

Wylleman and his colleagues (2016, p. 43) conducted three separate studies that clearly demonstrated that the decision to start using doping is a very complex one, with several different factors influencing each other at different points in time and all contributing to the decision whether or not to use doping. The Push Pull Anti-Push Anti-Pull framework was utilised by Wylleman and his colleagues to categorise the different findings of the three studies and gives a clear overview of the factors stimulating the athletes' decision to use doping (the Push/Pull factors) and the factors, which deter the athletes from starting to use doping (the Anti-Push/Anti-Pull factors). (Wylleman et al. 2016, p. 47).

Figure 5. Holistic Athletic Career and Push Pull Anti-Push Anti-Pull framework utilised to demonstrate Wylleman's et al. (2016, p. 56) results



In line with previous research by e.g. (Donovan 2015), Wylleman et al. (2016, p. 47) found that athletes do not always evaluate the current repressive anti-doping strategies as highly efficient. It might therefore be useful to develop more preventive anti-doping strategies to complement the repressive strategies. Using the different quadrants of the Push Pull Anti-Push Anti-Pull Framework as a theoretical framework, it can guide the way such preventive interventions, including anti-doping education, are organised.

When considering the push factors, which are negative factors in the current situation, from an international federation's perspective, we must see what push factors the IFF can have an impact on and try to remove these factors or at least minimise their impact. The culture of the sport is one thing that an international federation can influence. In the floorball world, one can argue, that a pro-doping culture does not exist, or at least not today. For the IFF, the sport culture in floorball can therefore be considered as an anti-push factor. But the IFF needs to stay alert and react if indications of pro-doping attitudes are emerging and continue to support doping free sport through for example awareness campaigns.

An example of possible pull factors are the beliefs athletes hold on the perceived benefits they will receive in the future from using doping. This assumption is in line with the high

benefit appraisals highlighted as a risk factor in the Sport Drug Control Model. But according to Wylleman and his colleagues (2016, p. 47) not all pull factors seem to be realistic consequences of doping use. Therefore, it could be interesting to better inform athletes about doping, so that the unrealistic exaggerated expectations of doping use do not influence the athletes' attitude towards doping. This is something that the anti-doping organisations, such as the IFF, could pay more attention to when planning the anti-doping education content.

Academic achievement is also pointed out as an anti-push factor as it serves as a backup if the athlete does not reach the professional level. In floorball when the sport is only a full-time profession for only a few athletes today, most of the players do have to think about their career beyond sport anyway, and this can be considered to decrease the risk of doping use. But if more money will be involved in the sport in the future, and the player salaries are increasing, this can also increase the athletes' will to take risks by using prohibited substances to enhance performance. This point was also emphasised by Donovan (2015) as the Sport Drug Control Model also highlights that when sport becomes business the risk of doping increases. This is something the IFF needs to be aware of.

Another anti-push factor mentioned in both the Sport Drug Control Model and the Holistic Athletic Career (HAC) and Push Pull Anti-Push Anti-Pull framework, is the athletes' entourage, such as parents, friends, staff etc. (Wylleman et al. 2016, Donovan 2015). The IFF should therefore also start looking into designing information and education programmes for the athletes' entourage that it has access to, such as the team managers, coaches, team doctors and other team staff.

As an anti-pull factor Wylleman and his colleagues (2016, p. 48) point out the considerations of the future negative consequences related to the use of forbidden substances. In the Sport Drug Control Model by Donovan (2015) this is also highlighted as the threat appraisal. Therefore, the anti-doping organisations such as the IFF, could make the athletes more aware of these anti-pull factors/threat appraisals, through information and education programmes. For example, athletes who have admitted the doping use, have told that they found it more difficult than expected having to live a lie and the impact it had on their significant others, or the fact that using doping caused severe side effects, which sometimes even needed surgery to be solved. In addition, there are athletes, who have received sanctions for using nutritional supplements and claim this being unintentional doping. These athletes, even if they were from other sports, who have previously used doping and are willing to share their experiences, could be utilised for informing especially young

players of the negative consequences and strengthen the anti-pull factors/threat appraisals. (Gerdes 2017; Dingle 2016; Hamilton 2012).

Many studies, in addition to Donovan's (2015) and Wylleman's et al. (2016 p. 45), have also indicated that, even though using nutritional supplements is normal during the sports career, they can possibly also play a part in the use of forbidden substances. The way athletes administer supplements into their body is often similar to the way they use doping. While it seems impossible to ban supplements, athletes and their entourage need to be aware of the risk to start using doping may increase as a consequence of using supplements. Therefore, the empirical part of this study as well as the discussion part will also focus on supplement use within the sport of floorball and the possible risk associated with it.

In general, it can be concluded that both the Sport Drug Model (Donovan 2015) and the study by Wylleman et al. (2016) provide insights into the factors that can influence the complex decision process related to the use of doping in elite sports. Identifying how certain factors can contribute to the choice of taking doping, whilst other factors may deter athletes, provides insights in the way more preventive anti-doping strategies such as anti-doping information and education programmes can be developed. These preventive strategies should complement the more repressive anti-doping strategies, such as testing.

Recent anti-doping research

In a recently published research project (Backhouse et al. 2016), which includes a summary of all social science research within the anti-doping field, the project team highlighted the fact that athletes and athlete support personnel have received little of formal anti-doping education. The internet and media have been the prominent sources of information for athletes, which highlights the need for anti-doping organisations to engage with these platforms to ensure correct and accurate messages are being communicated.

Backhouse's project team (2016) also investigated the efficacy and effectiveness of anti-doping education programmes.

According to Backhouse et al. (2016) the programmes which are effective in changing behaviours, attitudes, or intentions relating to performance enhancing drugs are characterised by:

- Delivery over longer periods (2-10 weeks) and comprising several teaching sessions rather than those delivered on a one-shot basis.

- Addressing the range of topics including drug and alcohol related issues, alternatives to drug use (e.g. nutrition, training methods) and media/peer pressure resistance.
- Increasing participant involvement and ownership in the programmes through peer-led teaching.

For an international sport federation, some of these characteristics are hard to achieve. Especially the first point, delivery over longer periods, is a challenge when there is much distance between athletes and the international federations. The international federations do normally not have at continuous or direct contact with the athletes. For example, the only time when the IFF meets its athletes from around the world face to face, is during the IFF events. But during these occasions the athletes' primary focus is naturally on the game performance. So, when planning any education session with the athletes during the events, the IFF needs to take the teams' match schedule and training schedule into consideration and there is no possibility to deliver a very long education session. But maybe this recommendation of a longer period is directed towards the organisations closer to the athletes who have regular contact with their athletes, like schools, universities, clubs or national federations. The IFF's role could then be more of a facilitator, assisting its national member associations to include anti-doping education in their regular activities.

Addressing a range of topics together with the anti-doping education is a point worth taken into consideration. Maybe topics such as nutrition and training methods should be more frequently emphasised, especially by the environment closer to the athletes, such as national member associations and the club teams? But the IFF should also keep these in mind when planning any education session. In addition, other topics related to fair play and a level playing field, such as match fixing, are issues that should be raised by the sport federations as this is a growing concern.

The third factor that Backhouse stresses is increasing participant involvement and peer-led teaching. In this project, participant involvement has been given high priority. The empirical part includes input from the athletes, and their opinions and ideas are the starting point for the IFF's anti-doping education programme. In addition, peer-led teaching is also something that the IFF could consider. Especially when targeting younger athletes. When the messages are delivered by top athletes the content might go through better and the players' buy-in can be reached. But first the athletes that are to teach their peers need to have enough knowledge themselves.

4 History of testing and doping in floorball

As in many other international sport organisations, the IFF's doping prevention strategy has previously relied much on testing the athletes. The focus is however shifting towards emphasising the role of information and education. But before developing any kind of prevention strategy, it is worth while to look at the testing statistics and the past doping cases within the sport. This gives a picture of what the culture is like in floorball and if there are certain prohibited substances that might be more commonly used in the sport.

The IFF annually collects the statistics of all doping controls made in floorball and publishes the statistics on the IFF website www.floorball.org under Anti-Doping. All IFF member associations also annually report on the doping controls performed nationally by the national anti-doping organisations.

Table 1. Floorball Test Statistics 2005-2016

Year	**Total number of tests initiated in-competition by IFF**	**Out-of-Competition tests conducted by IFF**	**Total number of tests conducted in-competition (IFF + NADOs & MAs)****	**Total number of tests conducted out-of-competition**	**Total number of tests conducted in Floorball**
2005	34	-	178	223	401
2006	32	-	184	171	355
2007	44	-	286	322	608
2008	92*	10	303	351	654
2009	52	19	264	306	570
2010	54	19	251	273	524
2011	58	26	253	278	531
2012	61	28	291	238	529
2013	61	31	256	233	489
2014	64	31	234	165	399
2015	62	32	210	136	352
2016	65	32	224	173	397

** change of IFF competition system (2 EuroFlooorball Cup's played in 2008)*

*** NADOs= National Anti-Doping Organisations, MAs= IFF Member Associations*

There has been a decrease in the total number of doping tests conducted in floorball during the recent years. This reflects the overall change in planning and initiating testing, where the focus has shifted from quantity to quality. Instead of testing the athletes randomly and analysing samples only with the standard menu, the tests are more targeted than before and follow a smarter testing plan and the World Anti-Doping Agency's rule document concerning testing and sample analysis in different sports. (WADA Technical Document for Sport Specific Analysis 2018).

Table 2. Anti-Doping rule violations in floorball (2005 – January 2018):

Year	**Substance**	**Nationality**	**Event/League**	**Sanction**
2005	Cannabinoids	FIN	Finnish League	6 months
2005	Norandros-terone	NOR	Out of comp. NOR	Two years
2005	Norandros-terone	NOR	Norwegian League	Two years
2005	Cocaine	NOR	Norwegian League	Two years
2007	Cannabinoids	CZE	Czech League	3 months
2007	Cannabinoids	GER	German League	6 months
2008	Methyleph-drine	JPN	Japanese League	3 months
2010	Cannabinoids	FIN	Norwegian League	1 year (2nd ARDV)
2010	Cannabinoids	SWE	Norwegian League	4 months
2010	Terbutaline	FIN	Finnish League	Warning
2012	Cannabinoids	CZE	Czech League	14 months
2012	Methylhex-aneamine	NOR	Norwegian League	6 months
2012	Methylhex-aneamine	NOR	Norwegian League	6 months
2015	Testosterone	SWE	Swedish 5th divi-sion	Two years

2015	Dehydrochlor-methyltestos-teron (at-tempted use)	SUI	Swiss 4th division small field league	Two years
2016	Cannabinoids	ESP	World Floorball Championships Qualifications	9 months
2018	Higenamine	AUS	Admitted use	Warning
2018	Sibutramine	THA	World Floorball Championships Qualifications	9 months (pending)

Based on the above figures, one can say that floorball is at least for now, a quite clean sport. The prohibited substances used are mostly recreational drugs. The “real” doping cases, with substances like testosterone, have been reported from samples of quite low-level floorball players, not top-level players. In most of these cases the reason for taking the substance has been reported to be other than performance enhancement in floorball. These lower level floorball players have been more involved in gym activities than in floor-ball.

When looking at the anti-doping rule violations in floorball, cannabis is the most common prohibited substance. Since 2005, when for the first time the statistics were systematically collected by the IFF, there have been 18 anti-doping rule violations in floorball from which eight are results of recreational drugs, including seven cannabis cases. All except one of these anti-doping rule violations have been collected in the national leagues and then the national anti-doping organisation has been the results management authority. One positive tests for cannabis has been found in an in-competition tests initiated by the IFF and in 2018 one player admitted the use of a prohibited substance, higenamine, which was an ingredient in a dietary supplement and another player tested positive for the stimulant sibutramine, which is commonly used in weight loss products.

Higenamine, methylhexaneamine and sibutramine are prohibited substances which can be found in many supplements and under many different names. This is problematic, as these can typically be found in nutritional supplements that are designed to increase energy or aid weight loss. These kinds of substances have led to quite many doping rule violations and some of these cases might be a result of unintentional mistakes made by the athletes. (WADA Prohibited List 2018; UK Anti-Doping 2010; Hobson 2016; Harris-Fry

2017; Brown 2017). In the latest IFF doping case for example, the player got a positive test for using the stimulant sibutramine, which was an ingredient in a weight loss product and the player will have to serve an ineligibility period of nine months.

The testing statistics and anti-doping rule violations need to be taken into consideration when planning the future IFF anti-doping education activities. The IFF needs to keep the players informed about potential risks associated with nutritional supplements and the athletes should also be educated in how to engage in a healthy lifestyle and a diet without risky supplements and recreational drugs. The issue with supplements will be covered in more detail in the discussion part of this study.

5 Participatory Education Planning

In order to plan the IFF anti-doping education programme, so that it best serves its target group, namely the athletes, the IFF first need to know what kind of education the athletes would need both regarding method and content. By gathering this information, the aim is to prepare an anti-doping education programme that best serves its target audience. The athletes' voice is essential in order to prepare an anti-doping education approach that is most beneficial for the target group and therefore the athletes are actively participating in the process. This kind of approach can be described as participatory planning.

For example, Tristan McCowan (2009, p. 68-70) has pointed out that decision-making bodies have recognised that consultation with the "students" is one of the key aspects when improving education. Although McCowan's work derives from the school world, the same principle can be adapted for other organisations that are planning education for their target groups. In this case, the athletes are the pupils for whom the IFF wishes to plan and deliver the best possible anti-doping education.

McCowan (2009, p. 70-72) also points out that participation is instrumentally beneficial. The benefits arising will serve both individuals (such as improvements in learning) and for the organisation (improving efficiency etc.). This approach values the athletes' voice because of their expert perspective and their contribution to how education can be developed and improved, which is the aim when planning the IFF anti-doping education.

Involving the target group when planning education is also the key when motivating the target group. Asko Leppilampi (2002) indicates that the best way to motivate the students is to start from where they are and not from where the educator is. Therefore, it is essential to find out the starting point of the target group, meaning what they already know about the subject as well as what they wish to know in the future. This is exactly what the goal is for this project and the empirical part collects this valuable input from the athletes.

Participation in education planning can also be intrinsically valuable. The educationist most associated with the development of participatory democratic approaches to schooling is John Dewey. According to Dewey (1966, p. 87 in McCowan p. 27) *"democracy is more than a form of government; it is primarily a mode of associated living, a conjoin communicated experience"* and he highlights the role of education. Participatory pedagogy and use of enquiry are some of the recommendations developed from this view.

Participation in education is today seen to be a “good thing” and it is widely accepted that the best and most secure learning occurs when the students are centrally involved in controlling, directing and monitoring their own learning. Alan Rogers (2009, p. 257-258), describes participatory education as programmes which are highly participatory, adapted to the needs of a particular set of participants in every respect involving curriculum, materials, length of the programme, timing and method of evaluation. Fully participatory education then, is not simply access or encouraging young people or adults to join education programmes by adapting these programmes to their conditions. Nor is it simply a learner-centred approach, asking the learner to join in pre-chosen activities. Rather, it is helping individuals and groups to learn what they want to learn, when they want to learn it, and for as long as they want to learn it. It is helping them to meet their learning needs (Rogers 2009, p. 253).

The IFF anti-doping education is not fully participatory as the participants are not to decide about all aspects of the education programme. In addition, there are also other issues that need to be taken into consideration when planning the education, such as for example human and financial resources. But the aim is anyhow to meet the needs of the target group and therefore let the athletes be highly involved in the process. Therefore, the education planning process in this project can be considered as highly participatory.

The IFF has collected the information about the athletes’ prior education and opinions about future anti-doping education through a survey questionnaire. In addition, the IFF has also utilised the expertise of the IFF athletes’ commission members, who have been asked to share their opinions about how anti-doping education should best be delivered.

6 Conducting the research

The purpose of this thesis is to develop the best possible IFF anti-doping education programme primarily targeted at the athletes entering the IFF events. Therefore, the research will collect input from the main target group. This input will then be presented, analysed and discussed. To conclude, a summary of the conclusions will be presented.

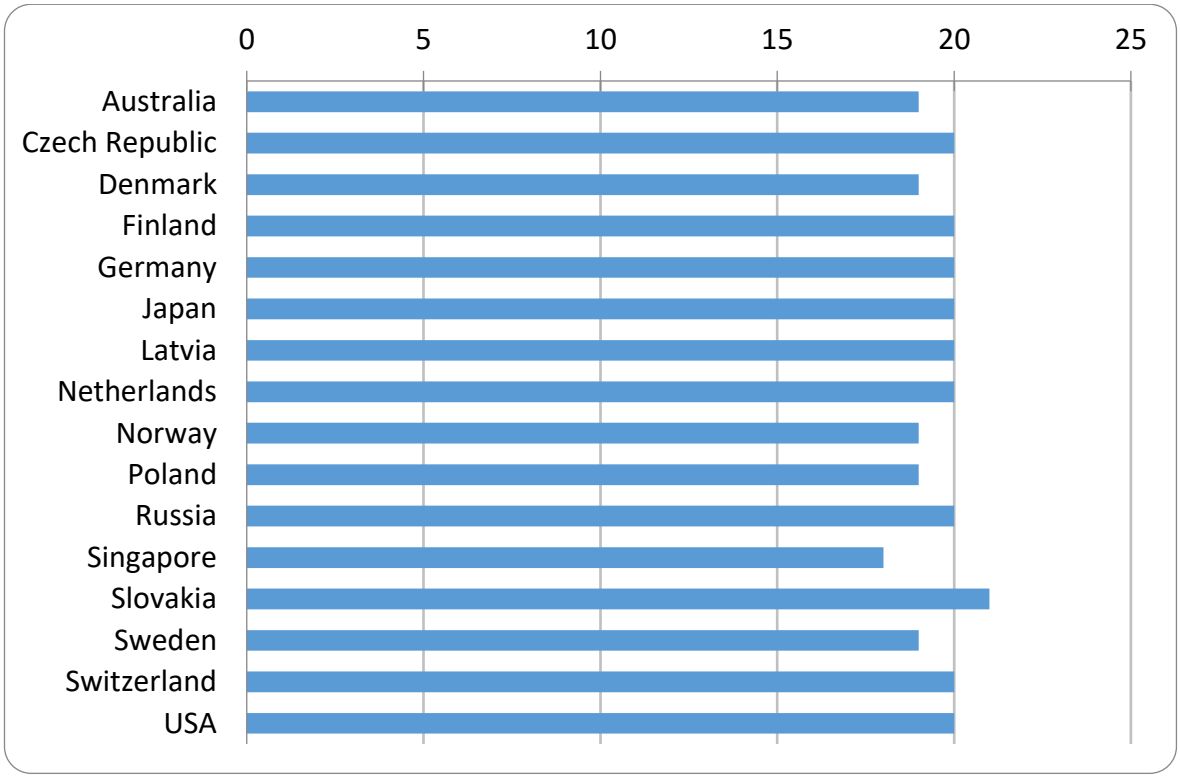
This section will also explain why and how the research was conducted starting with introducing the target group and the research- and data collection methods.

6.1 Target group

The target group for the IFF's anti-doping education programme are the athletes. Therefore, the knowledge and opinions of the athletes have been collected and analysed to reach a better understanding of what type of education and what education content would best serve the purpose of educating the athletes.

A total of 314 athletes answered the survey during the Women's World Floorball Championships 2015. The respondents represented the 16 countries attending the 10th IFF Women's World Floorball Championships played in Tampere, Finland, 4th – 12th of December 2015.

Figure 6. The respondents per country (n = 314)



The number of respondents per country varied from 18 to 21. Singapore being the country with the lowest number of respondents and Slovakia the team with a total of 21 players answering the questionnaire. Slovakia had one respondent more since one member of the team staff was also given the permission to answer the questionnaire as she was also an international level player. Most of the teams consisted of 20 players who all answered the questionnaire.

In addition, the opinions and ideas of nine IFF athletes' commission members, were collected during the IFF athletes' commission meeting in spring 2016 through a focus group interview.

6.2 Research method

In the research project, the main concern should be the appropriateness of the methodology and methods to the research aims that are wished to be achieved. Two major ways of doing research are qualitative and quantitative methods and mixed methods are a third commonly used way of collecting the needed data. Whether the type of research design opted for comprises qualitative methods only, or quantitative, or a mixed of both should be driven by the research question. (Daymon & Holloway 2011, p. 105; Creswell & Plano Clark 2017, p. 7).

Qualitative and quantitative research

A starting point when conducting a research should be to consider which method can best clarify the issue being studied. A research always has a purpose and mission which directs the selection of the research strategies. In the end it is the researcher that selects an approach and method that he or she is most convinced of to fit the project. (Hirsijärvi et al. 1997, p. 134).

A simplified differentiation between quantitative and qualitative research is to say that the quantitative research method focuses on numbers whereas qualitative research focuses on meanings. But numbers and meanings are also mutually dependent on each other. Numbers are based on conceptualisation of meanings and conceptual phenomenon with meanings can be expressed with numbers. Therefore, measuring on all levels include both a qualitative and quantitative aspect. (Hirsijärvi et al. 1997, p. 133; Alasuutari 1995; p. 25-31).

The central parts of a quantitative research are to utilise previous theories and research, to present hypothesis, defining concepts, planning data collection to fit numerical analysis, precise selection of target group, organising variables into table format and organising data into a format that can be statistically processed and making conclusions based on a statistical analysis. (Hirsijärvi et al. 1997, p. 137; Alasuutari 1995; p. 25-27).

The typical elements in a qualitative research is that the data collection is comprehensive in its nature and the data is collected in natural situations, therefore humans are favoured as the data collection instrument. Inductive analysis is used with multifaceted and detailed

data analysis and the “voice” of the target group is emphasised. Choosing the target group is adapted to the purpose and the research plan is quite flexible. In addition, the cases are being explored as unique and the data is interpreted based on that. (Hirsijärvi et al. 1997, p. 165).

Mixed methods

Quantitative and qualitative methods are approaches that in fact are hard to separate from each other in detail. They can in fact be seen as complementary approaches. A combination of both qualitative and quantitative approaches is quite commonly used by linking the research results in the same project, one after the other or at the same time. A quantitative phase can for example forego a qualitative phase, which was the case in this study. (Flick 2002, p. 268; Hirsijärvi et al. 1997, p. 133; Alasuutari 1995, p. 23).

In a sequential explanatory design, which is a more conventional form of mixed method research, the researcher collects and analyses quantitative data. Based on the results, the researcher then uses a qualitative approach to gain more depth and interpretive possibilities for the study. An example being combining the results of a survey and an interview study. In this type of design, quantitative strategies have priority and are informing the qualitative stage. Therefore, the results of the study can then be generalised. (Daymon & Holloway 2011, p. 353).

According to Flick (2002, p. 268) the mixed method approach can have different aims:

- to obtain knowledge about the issue of the study which is broader than that reached by using a single approach
- or to mutually validate the findings of both approaches

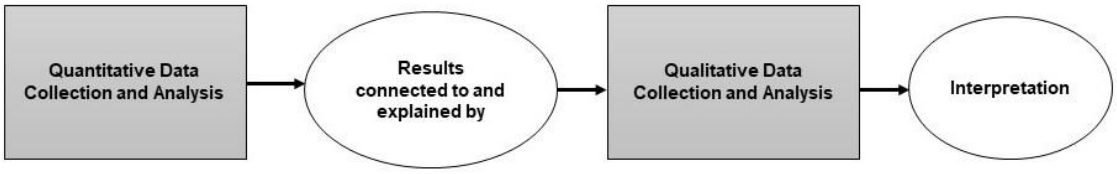
Combining the methods can lead to three sorts of outcomes. The first possible outcome is that the qualitative and quantitative results mutually confirm and support the same conclusion. The second outcome might be that the results emphasise different aspects of an issue but are complementary to each other and lead to a more complete picture. The third possible outcome is that the qualitative and quantitative results are divergent or contradictory. When the aim is to have a broader and fuller knowledge of the issue, all three outcomes are helpful. The third outcome is then an indicator of the limits of validity. (Flick 2002, p. 268).

John Creswell and Vicki Plano Clark (2017, p. 11) have also pointed out that mixed methods are useful when a need exists to involve the participants in the study, which was the

case in this project. In these cases, the researcher gathers both quantitative and qualitative data to best engage individuals and bring about change.

For this study the mixed methods approach was utilised when both quantitative and qualitative data was needed to best address the issue being studied through involving the target group to reach the desired research objectives. The quantitative approach was an appropriate method to explore the perceptions of a quite large group of athletes, in this case the 314 athletes. The qualitative method was best suitable for gathering deeper information from a small predefined group, such as the nine IFF athletes' commission members. The aim of the mixed methods strategy was both to obtain broad knowledge about the issue of the study and to validate the findings of both approaches. The research design was an explanatory sequential design, as the quantitative method was conducted before the qualitative phase, and the qualitative method was used to get deeper understanding of the quantitative results.

Figure 7. The Explanatory Sequential Design (Creswell & Plano Clark, 2017 p. 66)



6.3 Data collection methods

Surveys are quantitative methods to collect awareness, attitudes or behaviours of a large population. The advantage of surveys is that information can be gathered from a large number of people and a large number of questions can also be asked. The disadvantage can be that the data is too shallow. (Hirsijärvi et al. 1997, p. 191).

In qualitative research interviews are most commonly used as a data collection method. The biggest advantage with interviews compared to other data collection methods is that monitoring the data collection is flexible based on situational needs. (Hirsijärvi et. al 1997, p. 201).

Surveys

Survey research is an umbrella term under which there are several different versions for gathering information. Each format is designed to receive responses from the target group by asking for responses to questions. Questionnaires are common instruments to collect data in survey research. They consist of standardised questions sorted in a fixed order and often with fixed answer options. (Hirsijärvi et al. 1997, p. 189-191; Andres 2012, p. 45).

The success of any survey questionnaire depends for example on the salience of the topic, the wording and sequence of questions, the timing of administration, the ease of participation for the respondent, and the degree to which the respondents trust that the data will be handled anonymously. (Andres 2012, p. 45)

For this study the respondents were asked to complete a pen-and-paper questionnaire. The athletes were asked to fill in the questionnaire at the same place where they voted for the athletes' commission members, to make it easy to participate. Because the respondents entered the voting and questionnaire facility as teams of 18-21 individuals, the pen and paper version was selected instead of an on-line format. This saved the respondents' time as there were not that many laptops or tablets available. The respondents were told that the data will be reported anonymously and therefore the names of the athletes were not asked. The respondents were also asked to return the questionnaires to a closed box to further increase the anonymity.

The survey instruments should be tested during the survey development process. The purpose of piloting is to ensure that the level of language used in the questions is appropriate and understandable to the audiences, to assess whether the questions are understood as intended and to determine whether the order of questions is logical. The questions and questionnaire should always be piloted with those who share the same characteristics of the intended survey respondents. (Andres 2012, p. 27). For this research a pilot-study was conducted during the Men's World Floorball Championships 2014 after which the survey questionnaire was further developed.

The most appropriate analytical methods to reach the purpose and targets of the research should be utilised. The data that is collected through surveys is usually processed using quantitative methods as was the case in this study. (Andres 2012, p. 149-150; Hirsijärvi et al. 1997, p. 189-191). The statistical software Webropol was utilised to analyse the data in this research. The survey instrument, which was a structured questionnaire on paper, was

first filled in manually by the target group. The data was then added by the researcher to a Webropol questionnaire for the data to be analysed.

Focus group interviews

Interviews can be divided into unstructured, non-standardised interviews, semi-structured interviews, structured or standardised interviews and online interviews. In unstructured interviews, the questions are not determined beforehand, except for one general question in the beginning. In semi-structured or focused interviews, questions are asked according to an interview guide, which ensures that all topic areas will be covered. Structured interviews include pre-planned questions that are the same to every participant. They are much like written survey questionnaires and are rarely used in qualitative research. Online interviews consist of text-, audio- and video-chats conducted synchronously in real time or asynchronously in non-real time. (Daymon & Holloway 2011, p. 224-227.).

For this project the interview type used in the qualitative phase was unstructured. The members of the IFF athletes' commission were given only one general topic, which was the "IFF anti-doping education", which they were then asked to give their thoughts, opinions and ideas about. A total of nine athletes' commission members participated in the focus group interview.

During focus group interviews a group of people are interviewed or discussing a topic simultaneously during a restricted time. The group is often led by a moderator, who oversees that the group is discussing the given topic. The aim is to receive ideas, thoughts and perceptions about certain topics or issues and to see the topic from the target groups' viewpoint. Focus groups enable to gather many different experiences and perspectives on the same subject and another advantage is that each person's comments can encourage other participants to give further responses. Therefore, opinions might be elicited through the group interaction. (Daymon & Holloway 2011, p. 242; Alvehus 2013, p. 87-88).

Focus groups can also be an appropriate method in mixed methods strategy alongside other research techniques. They can be useful when seeking in-depth data after conducting a survey (Daymon & Holloway 2011, p. 242). This was also the purpose when utilising focus group interviews in this study.

Furthermore, focus groups can be divided into two types: pre-constituted groups and researcher-constituted groups. Pre-constituted groups consist of people who already for some sort of group such as professionals with the same speciality, members of a team, or

members of the same association. Researcher-constituted groups are created by the researcher for the specific research purposes. (Daymon & Holloway 2011, p. 245-246). In this project the IFF athletes' commission members can be considered a pre-constituted group as they are members of the same commission and represent the same sport.

Interviews also need to be documented in one way or the other. The interviews can for example be recorded or then the moderator can continuously write down what opinions or ideas the group discussion lead up to. It is also possible to rely solely on the moderator's memory, but this makes the information more uncertain. (Alvehus 2013, p. 91). In this study the moderator, who was the researcher's colleague, wrote down the ideas and opinions received from the IFF athletes' commission members during the interview. The input was then sent by e-mail to the researcher.

Due to the advantages mentioned above, unstructured focus group interviews were utilised in the qualitative phase of this project. The IFF athletes' commission was the focus group interviewed to receive more in-depth data about the issues that already had popped up from the survey answers and possibly also some additional ideas that could be utilised when planning the future IFF anti-doping education.

The IFF athletes' commission members were chosen for this study because they can be considered the players' spokespersons, the links between the IFF and the floorball players. Often, they are also experienced top players, who have valuable thoughts and ideas about how to best develop the organisation from an athletes' perspective. Therefore, it is important to involve them in any project that includes the athletes. Most of the athletes commission members in this study, eight out of nine, had also some previous experience of anti-doping education, which could be considered an asset when developing the future IFF anti-doping education programme.

6.4 Results

This section will first introduce the results of the athlete survey and then present the main findings of the focus group interview.

6.5 Athlete Survey

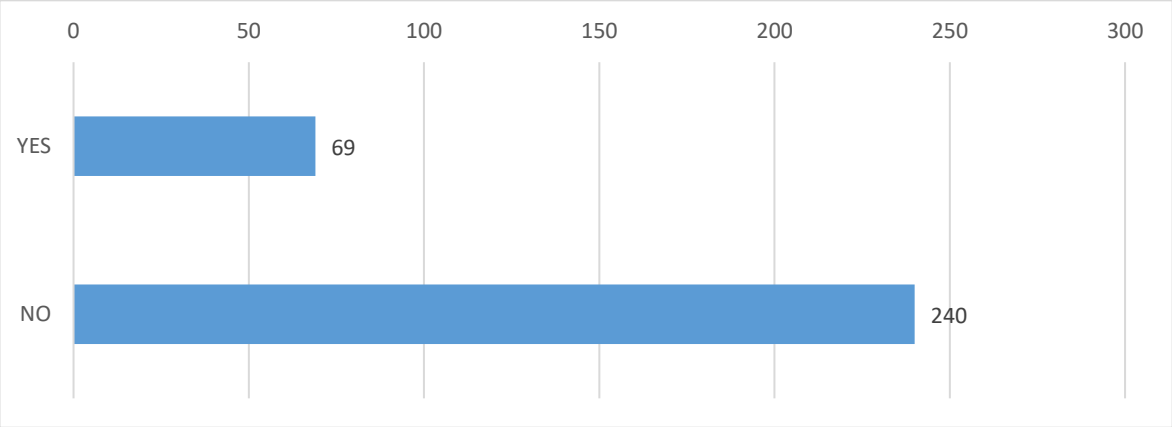
The target group for the IFF's anti-doping education programme are the athletes and therefore the knowledge and opinions of the athletes have been collected and analysed. The aim is to reach a better understanding of what type of education and what content would best serve the purpose of educating the athletes.

A total of 314 athletes answered the survey during the Women's World Floorball Championships 2015. The respondents represented the 16 countries attending the 10th IFF Women's World Floorball Championships played in Tampere, Finland, 4th – 12th of December 2015.

Previous anti-doping education

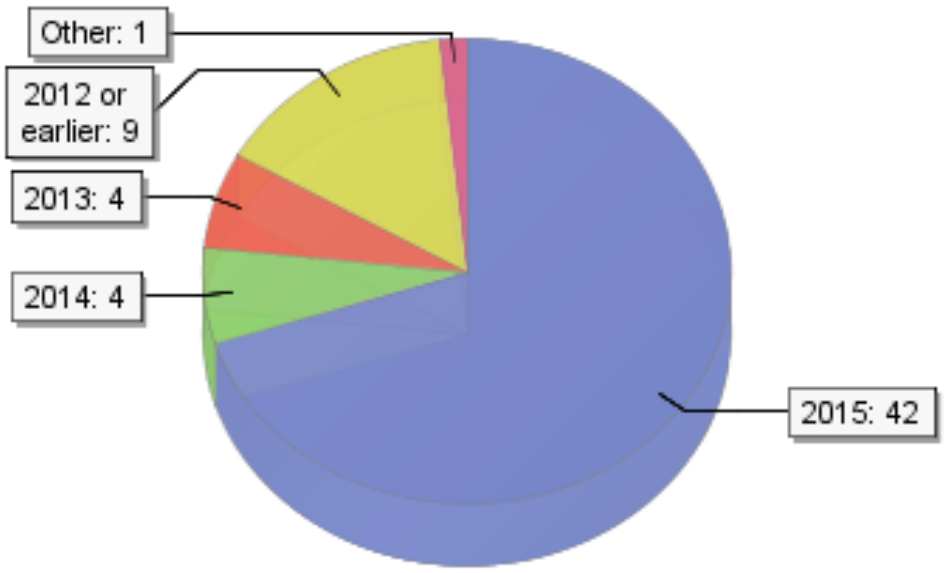
According to the results a majority of the athletes, 77,67 %, had not received any previous anti-doping education.

Figure 8. Previous anti-doping education? (n = 309)



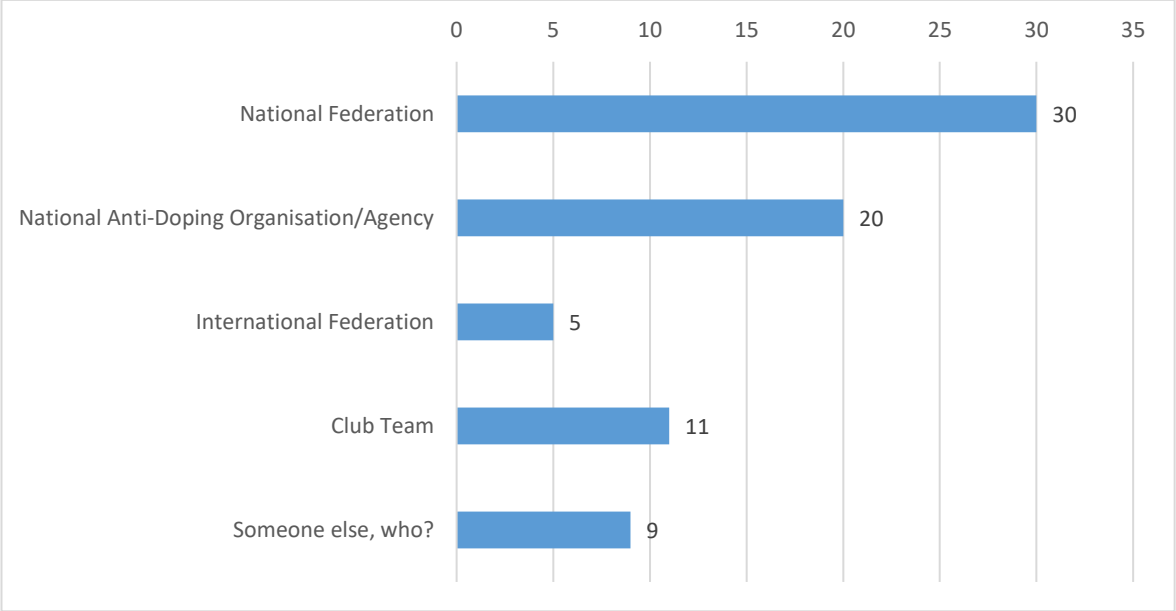
Out of those who indicated that they had received previous anti-doping education, the majority (a total of 42 respondents out of 58 who answered this question), reported that they had received the education during year 2015.

Figure 9. When was the anti-doping education received? (n = 58)



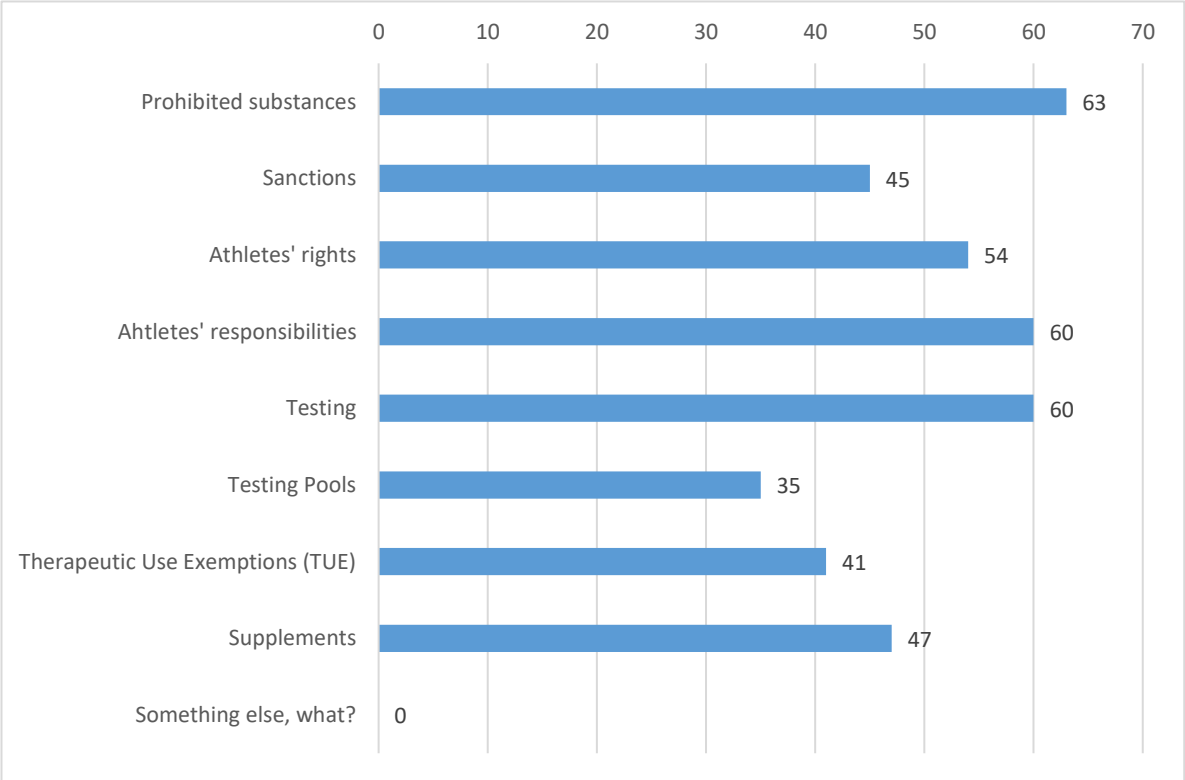
Most of the athletes that had received previous anti-doping education had been educated nationally either by their national member association, 30 athletes (42,9 %), the national anti-doping organisation, 20 athletes (28,6 %) or club teams, 11 athletes (15,7 %). Five athletes (7,1 %) had received education from the IFF. Nine athletes (12,9 %) reported that someone else organised the education. These other organisations were school (4 athletes), surf lifesaving Australia, Athletics Australia, Ice Hockey Federation, University and the European Olympic Committee EU office.

Figure 10. Who organised the anti-doping education? (n = 70)



Prohibited substances, athletes' responsibilities and testing had been most often on the agenda when asking about the previous anti-doping education content. Testing pools was the least familiar topic as only 50% of those who had received previous education had received any education in that topic.

Figure 11. What was the Anti-Doping Education content? (n = 70)



Future anti-doping education

Prohibited substances, athletes' rights, athletes' responsibilities and supplements all received an average over 4 with a scale from 1-5 when athletes were asked about what topics they would like to be educated in (5= very important, 4= important, 3= somewhat important, 2= not that important, 1= not at all important, ?= impossible to say).

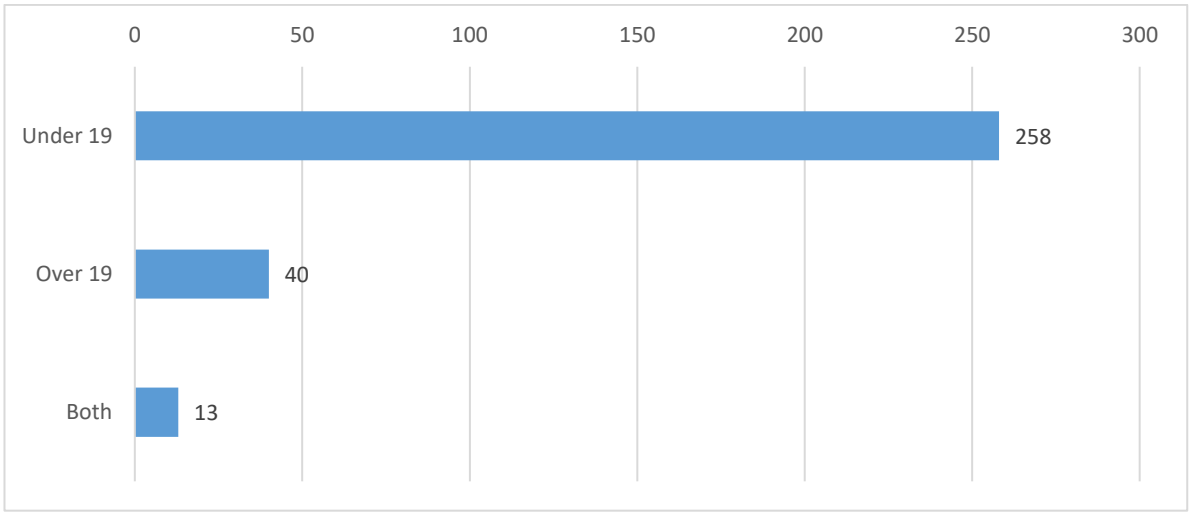
Table 3. How important would it be for you to receive more education in the listed topics from a scale from 1-5? (N=311)

	1	2	3	4	5	?= can't say	Total	Average	Median
Prohibited Substances	5	16	50	81	156	3	311	4.21	5
Sanctions	15	22	82	99	86	7	311	3.77	4
Athletes' rights	5	11	67	106	117	4	310	4.07	4
Athletes' responsibilities	8	7	66	110	117	3	311	4.06	4
Testing	9	29	100	97	74	2	311	3.66	4
Testing Pools	7	47	105	88	49	15	311	3.55	3
Therapeutic Use Exemptions (TUE)	9	25	87	90	81	15	307	3.83	4
Supplements	9	12	65	103	112	10	311	4.05	4
Something else, what?	0	0	0	0	0	0	0	-	
Total	68	170	623	774	792	59	2483	3.9	4

Testing pools was the least important topic for the athletes, but still the average was over 3,5. This indicating that all the listed anti-doping topics seem to be pretty important for the athletes.

When asked about at what age the education should be received it became quite evident that the athletes believed that education should be received early, when the athletes are under 19 years of age.

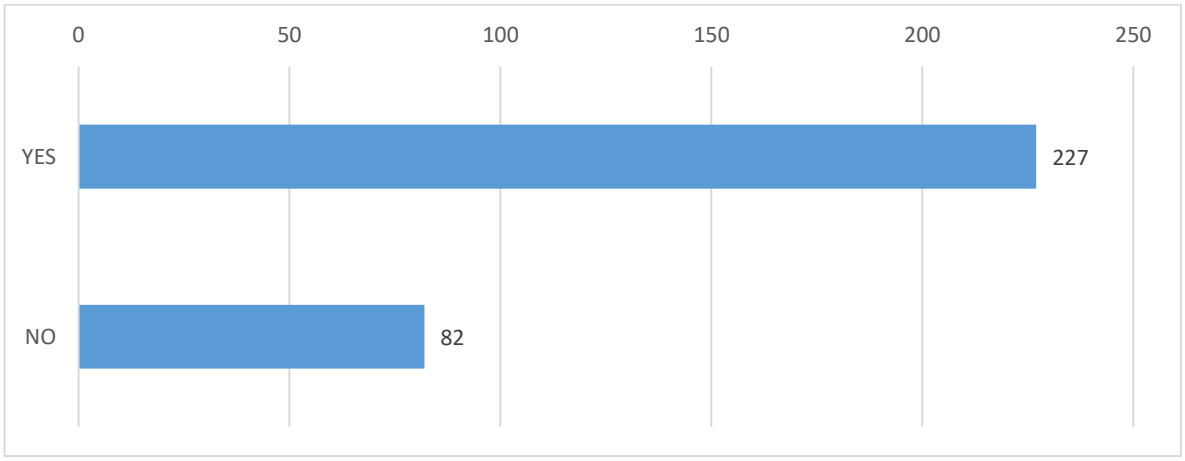
Figure 12. At what age do you think the education should be received? (N=311)



The IFF only organises under 19 (U19) events and adult events at the moment, so the U19 category should maybe then be the priority for organising anti-doping education.

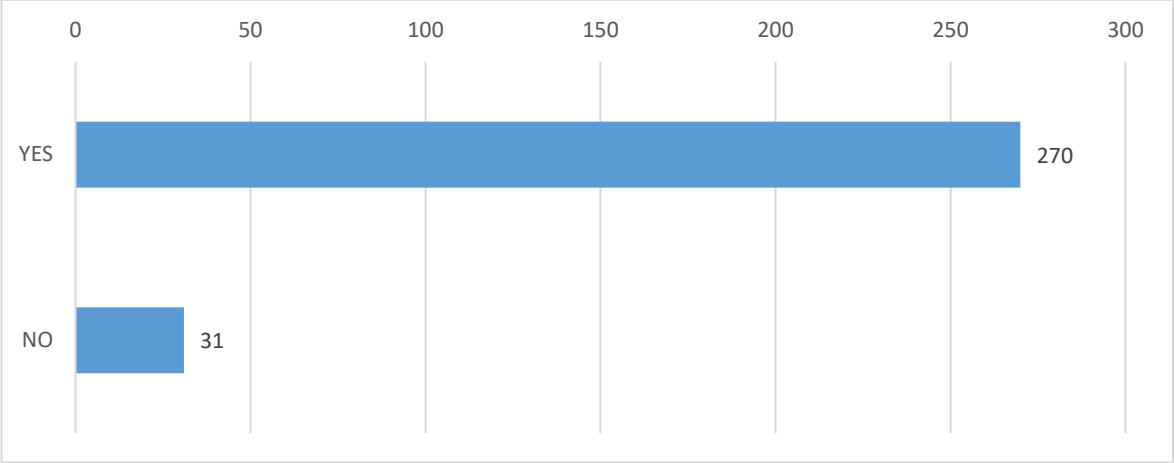
Most of the respondents, a total of 73,46 % declare that they would understand anti-doping education in English, but still there is a group of athletes who would not understand the content in English (26,54 %). This needs to be taken into consideration when planning the IFF anti-doping education programme.

Figure 13. Would you understand Anti-Doping education in English? (N=309)



Also, a great majority of the athletes, 89,70 %, would prefer to receive the anti-doping education in their own language.

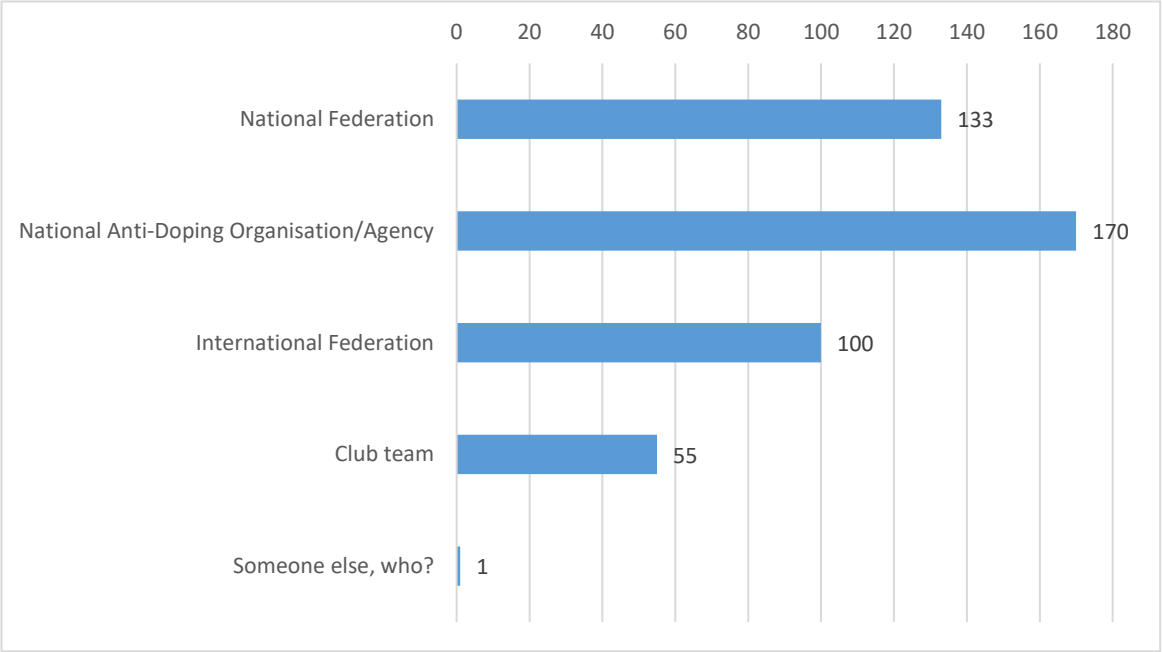
Figure 14. Would you prefer Anti-Doping education in your own language? (N=301)



In order to meet this wish, the IFF will need to cooperate closely with its national member associations and the national anti-doping organisations and outsource much of the anti-doping education activities to these organisations. More about the language issue and co-operation with other anti-doping organisations in the discussion part of this thesis.

The athletes were also of the opinion that anti-doping education should be organised nationally. Most of the athletes, 37 %, would give the responsibility to the national anti-doping organisations and 28,9 % would like to see that their national member association would organise the education. A total of 21,7 % of the respondents thought that IFF should be the organisation responsible for delivering anti-doping education and 11,9 % would give the responsibility to their club team. One of the respondents replied, that anti-doping education should be received in schools.

Figure 15. Who do you think should organise the Anti-Doping education? (N=311, 459 replies)



When asking about how the athletes would like to be educated, through which sources, face to face session at events was given most support followed by e-learning programmes, websites and social media. Education delivered by IFF athletes' commission members and team captains also received an average over 3.20 (3= somewhat important).

Education delivered by athletes from other sports and anti-doping newsletters were the least favoured options (2,8).

Table 4. What sources would be important in delivering the education from a scale from 1-5? (N=313)

	1	2	3	4	5	?= can't say	Total	Average	Median
E-learning Programmes	17	34	84	112	59	6	312	3.58	4
Face to face anti-doping sessions at Events	13	23	61	96	116	4	313	3.93	4
Websites	17	34	90	112	56	2	311	3.52	4
Anti-Doping Newsletter	45	79	90	72	24	2	312	2.86	3
IFF Athletes' Commission member	27	42	115	83	37	8	312	3.27	3
Team captains (who have been educated)	39	56	76	82	54	5	312	3.23	3
Athletes from other sports	58	69	90	61	25	8	311	2.84	3
Social media	32	38	102	91	44	4	311	3.29	3
Other channel(s), which?	0	0	1	2	1	0	4	4	4
Total	248	375	709	711	416	39	2498	3.39	3

Four athletes also thought that other channels would be useful. Two athletes mentioned videos, which was given the importance 3 (somewhat important) and 5 (very important). One athlete mentioned lecture by the national member association as education resource and gave that option the importance 4 (important) and one athlete mentioned applications as other source with 4 as the importance.

Supplement use

A great majority of the athletes, 83,5 %, reported that they use nutritional supplements.

Figure 16. Do you use nutritional supplements? (N=304)

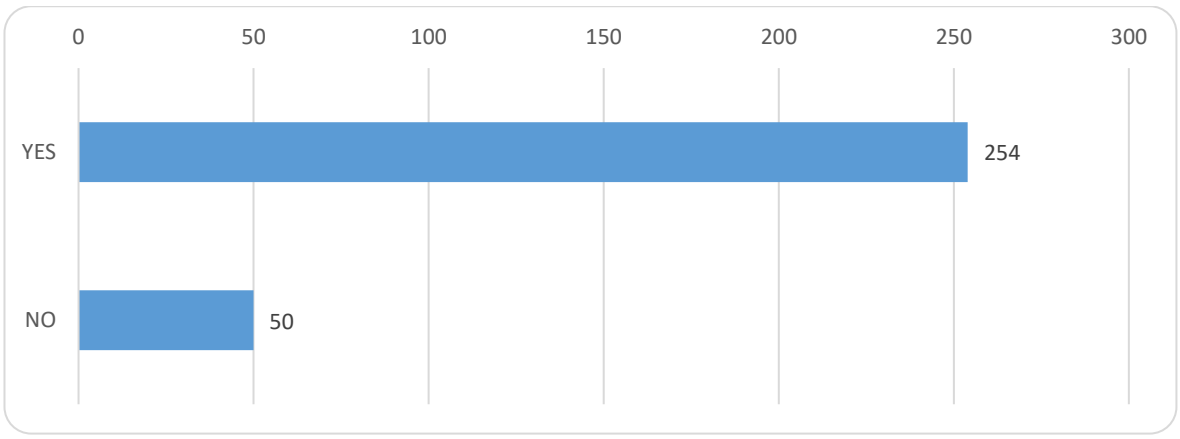


Table 5. If you use supplements, what supplements do you use and how important are they from a scale of 1-5? (N=306)

	1	2	3	4	5	Total	Average
Vitamins	12	15	50	70	92	239	3.9
Minerals	20	18	40	57	72	207	3.69
Recovery drinks	21	18	51	68	46	204	3.49
Energy bars	43	35	76	45	18	217	2.82
Energy drinks	55	37	53	48	28	221	2.81
Extra protein	48	27	48	33	20	176	2.72
Extra carbohydrate	50	31	30	20	8	139	2.32
Fat burners	87	30	16	7	3	143	1.66
Total	336	211	364	348	287	1546	2.92

A total of 239 athletes used vitamins and the average importance of vitamins was 3.9 (4= important). Many of the athletes also reported the use of energy drinks and energy bars (221 and 217) and minerals and recovery drinks were also used by many (207 and 204). Minerals were reported as being the second most important supplement after vitamins and recovery drinks were also reported as being more important than energy bars and energy drinks. More than 57% of the respondents also reported the use of extra protein.

Fat burners were also quite popular and almost half of the athletes (46,7 %) reported the use of these. This is a bit alarming, even though the use of fat burners were not reported as that important (average 1.6). Fat burners can include prohibited substances and the use of these have led to positive doping tests and sanctions. (Maughan 2015 & 2016; Australian Sports Anti-Doping Authority 2017; US Anti-Doping Agency 2018). One respondent reported the use of creatine, which was not listed as an option in the survey and declared the use as important (4).

Then the athletes were asked about the reasons for using supplements and to evaluate how important the different reasons were. Most of the athletes (242 athletes) reported recovery as the main reason for using supplements or simply reported that they thought they need it (241 athletes). These reasons were also reported as important (recovery) and somewhat important (believe I need it).

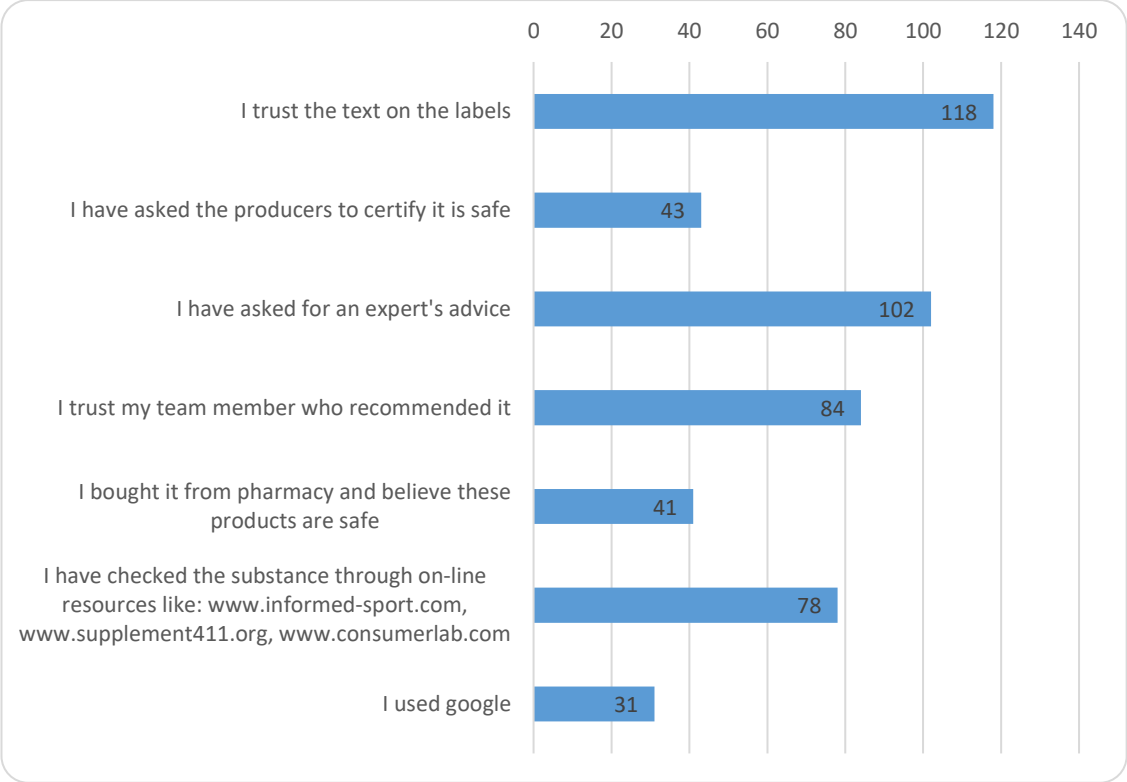
Table 6. How important are the different reasons for you to use supplements from a 1-5 scale? (N=303)

	1	2	3	4	5	Total	Average
Some other reason, what?	0	0	0	4	4	8	4.5
Recovery	8	15	28	96	95	242	4.05
I believe I need it	23	24	70	69	55	241	3.45
Someone else thinks I need it	79	35	42	34	19	209	2.42
I take it just in case	65	38	45	27	11	186	2.36
I have a disease	91	20	20	20	10	161	1.99
Weight loss	96	28	30	11	5	170	1.83
Weight gain	109	24	23	5	1	162	1.55
Total	471	184	258	266	200	1379	2.77

Many of the athletes also reported that they used supplements because someone else thinks they need them (209 athletes) or take it just in case (186 athletes), but the importance of these reasons was rated as “not that important”. Over 50% of the athletes also reported weight loss (170), weight gain (162) or having a disease (161) as reasons for using supplements, but these were reported as not that important. The big number of respondents reporting having a disease as the reason for using supplements can maybe be explained with that they use of supplements when being temporarily sick, suffering from a cold etc.

Other reasons for using supplements that were reported as very important were: good taste, easy to take and energy for games. Other reasons mentioned that were reported as important were: injury prevention, muscles plus dehydration and supplements being very healthy. Having a vegetarian diet was declared as a reason for taking supplements by two athletes. One of the athletes reported this as a very important reason and the other athlete as an important reason. To end the survey the athletes were asked about how they knew that the supplements they were taking did not include any prohibited substances.

Figure 17. How do you know the supplement you are using does not contain any prohibited substance? (N=268)



A total of 44 % of the athletes reported that they trusted the text on the labels and 38 % reported that they had asked for an experts' advice before taking the supplement. As many as 31 % reported that they trust a team member who recommended the supplement and 29 % of the athletes reported that they checked the substance through more advanced on-line resources like informed-sport.com. A total of 16 % of the athletes informed that they have asked the supplement producers to certify that the product is safe and 15 % of the respondents reported that the product was bought from a pharmacy and that they believed these products are safe. As many as 11,5 % of the athletes reported that they used google for checking the substance. A more detailed analysis and discussion about these results is found in the discussion part.

6.6 Focus group interview

This chapter will introduce the results of the focus group interview with the IFF athletes' commission, including a total of nine members. The interview was conducted in May 2016 in conjunction with an IFF athletes' commission meeting.

The aim was to receive more in-depth data about the issues that already had popped up from the survey answers through an unstructured focus group interview in addition to

possible other valid ideas and comments. The members of the IFF athletes' commission were given the general topic, which was the "IFF anti-doping education" which they were then asked to give their thoughts, opinions and ideas about.

Education priorities

The IFF athletes' commission felt that the use of nutritional supplements is the biggest problem for the athletes since it is so unclear what can be used and what is prohibited. Furthermore, the IFF athletes' commission felt that it would be good to get more information from the IFF on how the IFF recommends that the players check if a supplement is prohibited or not.

In addition, the IFF athletes' commission felt that more information and education was needed about athletes' rights and responsibilities and about what to expect during doping tests. The IFF athletes' commission also felt that it could be useful to provide players with a positive anti-doping message. Information on what to do, rather than what not to do.

Education timing and channels

The IFF athletes' commission were of the same opinion as most of the athlete survey respondents. This meaning that they also felt that anti-doping education is needed and that it should be delivered already for the under 19 age group.

The IFF athletes' commission also pointed out the challenges with having anti-doping education session during the major IFF Events. They felt that the anti-doping education sessions during the World Floorball Championships can for example be problematic for players. For some teams the anti-doping session can for example be put into their schedule at a time that the players would prefer to be doing something else (for example on their rest day), and therefore there is a risk that the players feel quite negative towards having to participate in the education.

In addition, the IFF athletes' commission members felt that role models could be used more for delivering anti-doping education especially for juniors as listening to IFF officials talking about anti-doping can have much less impact than if there were current or former high-profile players giving the information, or at least an introduction, to help engage the players and make them understand the importance of anti-doping. The athletes' commission members also expressed their willingness to be utilised when delivering anti-doping education sessions for the under 19 age players at the U19 Events.

7 Discussion about the results

This chapter will look into the results of both the athlete survey and the focus group interview in more detail. Furthermore, this chapter will focus on comparing the results with the theories and recent research.

7.1 Anti-doping education needs and content

Based on the fact that only a few athletes responded that they have received previous anti-doping education one can say that more focus should be put on educating the floorball players in issues relating to anti-doping.

The lack of anti-doing education organised by anti-doping organisations is also something that Susan Backhouse and her colleagues (2016) pointed out in their research paper. The Internet and the media should not be the main and only source for the athletes to find anti-doping information.

According to the respondents in this study there is a need of education in a wide range of topics. All the topics mentioned in the survey (prohibited substances, sanctions, athletes' rights, athletes' responsibilities, testing, testing pools, therapeutic use exemptions and supplements) were considered important by the survey respondents. In addition, the athletes' commission especially highlighted the need of education in questions related to supplement use, athletes' rights and responsibilities and the doping control process.

Based on the above, the conclusion should be drawn that anti-doping education should be delivered in a wide range of topics. But when prioritising, special attention should be put on educating athletes in prohibited substances and supplements, the athletes' rights and responsibilities, the doping control process (testing), therapeutic use exemptions and sanctions. In addition, the athletes should understand that there can be both health and social consequences when using doping.

7.2 The supplement issue

When looking at the results, there is however one single topic that should receive special attention in the future and this topic is the supplements. Supplements were mentioned as an important topic both by the survey respondents and the athletes' commission members and it also came quite evident when analysing the survey answers that many floorball players use nutritional supplements.

The high use of supplements is alarming as such as there is always potential risks attached with the use of these. Some products might not even contain the expensive ingredients listed on the label but only inexpensive materials. And the athlete specific problem is that some products contain doping agents that are not declared on the label. (Aschwanden 2012; Maughan 2015 & 2016).

This can be considered alarming for two reasons. The biggest problem is the fact that supplements used in sports present an ongoing and very real threat in terms of an athlete committing an anti-doping rule violation. IOC's nutritional supplement study from 2002 showed for example, that out of the 634 samples tested, 94 (14.8%) contained substances, not listed on any label, that would have led to a positive doping test. There are in fact numerous examples of athletes that claim their positive doping tests have been caused by a nutritional supplement and that the anti-doping rule violation therefore has been unintentional, sprinters like Asafa Powell and Nesta Carter as well as swimmer Jessica Hardy, just to mention a few. And as recent examples from sports science have shown, contamination occurs for two main reasons. Firstly, cross-contamination can occur during the production process if the same equipment and storage facilities are used for supplements and for doping agents. Secondly, there can be deliberate adulteration, as many products are completely ineffective and adding pharmaceuticals may mean that the consumer sees a benefit from using the product. (IOC 2002; Hart 2013; Maughan 2015 & 2016; Harris-Fry 2017).

Another risk factor associated with supplements is what some resent research has indicated (Backhouse, Whitaker & Petróczi 2013, p. 244-248; Donovan 2015; Hildebrandt 2015; Wylleman et al. 2016), that supplements can be a gateway to doping. According to these findings, athletes using nutritional supplements have more positive attitudes towards doping, express greater beliefs that doping is effective and they also more often report using doping compared to non-users. This gateway hypothesis addresses that athletes who engage in legal performance enhancement practices, like using permitted nutritional supplements, appear to be at risk for transition towards doping. Therefore, the risk associated with the use of supplements should be included as an important topic in any anti-doping education activities.

In addition to the athletes' risk of getting a positive doping test, studies have also shown that the supplements can be dangerous. Some of the products have proved to contain impurities (lead, broken glass, animal faeces, etc.) because of poor manufacturing practices. (Mammoser 2018; Bachman 2016; Maughan 2015 & 2016).

When looking at the athletes' reasons for using supplements in this study, enhancing recovery and the fact that the athletes thought they need the supplements, were declared as the most common reasons to use supplements. But also, quite many athletes declared that they use supplements because someone else thinks they need to, or they take them just in case, or want to gain weight or lose weight. These answers seem to reflect a quite strong belief amongst the athletes that supplements are needed and are beneficial for athletes' health and sport performance. This seems to be the trend among elite athletes around the world and from different sports. But are the supplements really that beneficial?

Many researchers (Spector 2018; Lundell 2018; Maughan 2016; Hulmi 2015 etc.) have argued the opposite. According to for example Juha Hulmi's studies, the timing effect of protein recovery drinks on muscle hypertrophy has been overemphasised. More important than protein in a recovery drink or meal, is the total amount and quality of protein intake during the day, Hulmi argues. In addition, both Hulmi and Spector argue that studies have shown that a high dose of antioxidant supplements, at least vitamins C, E, D and calcium can decrease performance and health adaptation. Therefore, it can be safer to avoid antioxidant supplements. Hulmi has however also pointed out, that a few supplements, like whey and creatine, can boost performance by increasing muscle size. But more importantly, the individual differences and the different response to supplements, makes it hard to evaluate the final effect.

Based on the arguments above, the message to the athletes should maybe not focus so much on taking nutritional supplements, as the best and safest way to improve sport performance is probably through more traditional means, like focusing on a healthy lifestyle. A versatile healthy diet combined with enough rest, sleep and healthy habits (no smoking, avoiding alcohol) are maybe still the strongest and safest ways to improve performance. And like Spector (2018) argues, the billions wasted on the supplement products, assisted by the poorly regulated but rich and powerful vitamin industry could be spent on proper healthcare instead. This is perhaps also something that should be communicated to the athletes through anti-doping education.

Thus, when planning the anti-doping education sessions etc., the IFF could also look into what other topics should fit into the programme. Healthy habits, nutrition, healthy training methods, pressure resistance, match fixing are examples of additional topics that could be combined with the anti-doping education session. But the existence and availability of expertise and other available resources as well as proper timing, are issues that might limit the IFF's capability of running such multi-topic education programmes.

Another important topic that should be communicated to the athletes, is that the supplements used, should be safe (or as safe as possible). Therefore, athletes should learn how to check their substances with the help or reliable channels. Based on the survey responses, the athletes do not seem to pay enough attention to checking that the substances are safe.

As many as 44 % of the athletes reported that they trusted the text on the labels to certify that the supplement is safe, 31 % reported that they trust a team member who recommended a supplement and 11,5 % reported that they used google for checking the substance. But as previously discussed, supplement do not usually undergo strict controls, and the products can therefore intentionally or unintentionally include substances not mentioned on the labels. Team members should also only be trusted if they have the required expertise in these questions and google cannot be considered a very trustful resource. A total of 15 % of the athletes reported that they buy the products from a pharmacy and believe these are safe. It is no doubt, that products bought from a pharmacy are safer than those bought on-line, especially when buying for example vitamins and minerals. But pharmacies can also sell for example dietary supplements that can be risky. The athletes should therefore use other means to make sure that what they take is safe.

Based on the survey response 38 % of the athletes do so, by asking for an expert's advice and 29 % reported that they use advanced on-line resources, developed for checking the safety of nutritional supplements. Also 16 % of the athletes told that they ask the supplement producers to certify that the product is safe to use, which can increase the reliability of the product. In addition, this may also be taken into consideration if the athlete would have a positive doping test after using the supplement. The punishment might not be as harsh if the athlete can prove that he/she did his/her best to check that the substance is safe. But this is of course just speculation. Still the number of athletes that use these more advanced resources and methods to check the supplements should be higher. And one aim of the anti-doping education efforts should be to teach the athletes in this matter. Athletes should get more used to utilising trustworthy resources and also understand that they are responsible for what they ingest.

7.3 Anti-doping education timing

When considering both the survey respondents and the athletes' interviewed it became quite clear that the education focus should be on the younger age category, meaning the under 19 age group. The under 19 age category is the youngest age group that participates in the IFF Events and the players in the U19 age category are 15-19 years of age.

This approach is supported by the WADA and is for example highlighted in the WADA Information/Education Guidelines to Prevent Doping in Sport (2016), which recommends that young athletes should be the target group when delivering anti-doping education. When the IFF only organises U19 events and adult events at the moment, the U19 category should then be given highest the priority when planning and organising anti-doping education.

7.4 Anti-doping education channels

One of the issues to be solved is to decide the organisation best suitable for delivering the anti-doping education. When looking at what the WADA guidelines have to say, cooperation is one of the central elements. In addition to saving resources and avoiding duplication of education activities, it is also important to take the athletes' voice into consideration. The aim should therefore be that all athletes that enter the IFF Events are educated in different anti-doping questions by the anti-doping organisations best suitable to undertake the task. (WADA Guidelines for Optimizing Collaboration Between International Federations and National Anti-Doping Organizations 2016).

Based on the athlete survey results, most athletes feel that anti-doping education should be organised nationally, either by the national anti-doping organisation or the athletes' national member association. This is quite logical when taking the language issue into consideration. A great majority of the athletes, nearly 90 %of the respondents, would prefer having the education in their own language. For the IFF this is a challenge, as it would be quite an impossible task, to organise the education in all the needed languages.

Also, the fact that the IFF Events are the only occasions when the IFF meets its athletes and therefore the only opportunity for the IFF to organise a face to face anti-doping session is a bit problematic. This was pointed out by the IFF athletes' commission, who felt that this is not the best timing when the players want to have full focus on the games. There is therefore a risk that the players feel negative towards the sessions and are then not motivated to learn. To get the target groups' buy-in is essential for any education to succeed. And as for example Leppilampi (2002) has highlighted, to have a motivated target group and knowing what they need, is the key for successful education.

The survey respondents were also given the opportunity to share their views in more detail about the best education sources. Face to face sessions at events was the most favoured source of education, but also E-learning programmes and websites were rated as important sources. In addition, other channels, such as videos and applications, were

mentioned as important sources by some athletes. All other channels that were listed as options in the survey were also rated as somewhat important by the athletes with social media, IFF athletes' commission member representative presentation or team captain's presentation with an average over 3,2.

When taking the previous opinions into consideration including the language issues and the tight schedule at the major IFF Events, the conclusion that can be drawn is that the face to face anti-doping sessions should be organised during smaller events and preferably organised in the players' own language by the national anti-doping organisation or the national member association.

The logical starting point for the IFF when planning anti-doping education is therefore to establish strong partnerships with the national anti-doping organisations to have them delivering anti-doping education based on the athletes' needs. But as the resources of the national anti-doping organisations differ a lot, the IFF also must have the capability to step in and deliver the education sessions when needed. In addition, digital education platforms, could be utilised more in the future. Especially when more and more multilingual high-quality platforms are being developed by WADA and other bigger anti-doping organisations.

The IFF also needs to have some sort of knowledge and control of its athletes, that they are being educated in a proper manner. This could be done by asking for certifications from the teams entering the IFF Events, which would guarantee that the team members have participated in an anti-doping education session or successfully completed an E-learning programme prior to the IFF Event. If not, the team would then need to book anti-doping education through the IFF. For the IFF anti-doping education sessions at the U19 Events the IFF should also consider utilising the IFF athletes' commission members and have them assisting with delivering the education.

The World Anti-Doping Code 2015 also stresses the importance of evaluating and monitoring the information and education programmes. The IFF should therefore also decide upon a way to collect feedback from the teams and one option would be to collect this at the IFF Events, during the captains' meeting, where all team captains meet prior to the start of the event and/or the technical meeting, where the team managers attend. In this way, the IFF can closely follow up on how the system works and step in or change the approach if needed.

With this approach the IFF's role is to oversee and monitor that the teams entering the IFF Events are educated in the anti-doping questions and to coordinate the activities with the national member associations and the national anti-doping organisation. In addition, the IFF's role is to deliver anti-doping education sessions when there are no national organisations suitable for that. In other words, the IFF shall fill the anti-doping education gaps when needed.

8 Conclusions and development ideas

When taking the rules and guidelines, the social science research and theories as well as the athletes' voice into consideration, the following conclusions can be drawn for planning and delivering the IFF anti-doping information and education:

General:

- Anti-doping information and education is important and needed in floorball.
- The risk of doping in floorball is still low, but the IFF shall stay alert to the fact that the sport is growing and might include more business-like thinking in the future, which increases the risk of doping.
- Collaboration and partnerships with the national anti-doping organisations and the IFF member associations is essential to reach the desired goals.
- The national anti-doping organisations in cooperation with the IFF member associations, should be the primary source for delivering anti-doping education, but the IFF should step in when needed and facilitate/enforce the cooperation.
- The IFF shall concentrate its own education sessions on delivering face to face education during the IFF Events. These sessions should primary be organised for the U19 teams and teams who have not received prior education nationally.
- There is a need for the IFF to develop and implement evaluation tools to assess the effectiveness of the anti-doping education approach and its education programme, and to amend the content of the programme based on the outcome of the assessment.

Goals:

- The short-term goal should be that all athletes entering the major U19 Events would have received anti-doping education.

- The long-term goal should be that all athletes and their entourage entering the major IFF events would have received anti-doping education.

Target groups:

- The education should be targeted towards youth players, so the under 19 age category should be the IFF's main target group.
- Also new countries/teams should be targeted and countries where close cooperation with the national anti-doping organisation does not yet exist.
- The athletes' entourage such as the team managers, coaches, team doctors and other team staff should also receive anti-doping education and information.
- Anti-doping awareness campaigns should be directed towards a wide audience such as athletes, fans, spectators and media.

Content and channels:

- Addressing the range of topics, including a variety of anti-doping topics, but also other more values-based topics related to fair play, the spirit of sport and/or for example nutrition, should be emphasised.
- It is also essential for the athletes to understand that there can be both health and social consequences when using doping.
- Information and education should at least include information about the Prohibited List, about the risks associated with using nutrition supplements, testing, therapeutic use exemptions, sanctions, the athletes' rights and athletes' responsibilities.
- The IFF shall make sure that the athletes know that an effective testing programme exists and more importantly, that they know their rights and responsibilities and the negative consequences if being caught for doping.
- The IFF should when possible, also include participant involvement and ownership in the programmes through for example peer-led teaching. Especially when targeting the youth.
- The IFF should make sure that valuable and up to date information about anti-doping matters are being published through the IFF information channels such as the IFF website, newsletters and social media.
- Anti-doping awareness campaigns, shall continue to be launched in order to promote clean sport and to emphasise that doping is fundamentally contrary to the spirit of sport in the sport of floorball. These campaigns should in the future include a positive key message.

- The IFF should utilise new technology when delivering anti-doping information and education such as high quality multilingual E-learning programmes

8.1 Validity, reliability and trustworthiness

Validity, goodness, trustworthiness and soundness. Lesley Andres (2012, p. 115) uses these words to describe the worth or “truth value” of a research project. In survey research, information collected through survey modes is valid or trustworthy to the extent that it produces information that answers the research questions posed by the researcher, accurately describes the sample at hand, and, if appropriate, can be extended to individuals beyond the participants of the study.

In this research the intention has been to answer the research questions and to accurately describe the sample. It can also be possible to utilise the findings of this study when planning anti-doping education programmes for athletes from other similar sports.

For a study to be credible, it must be carried out in a way that the research participants are described accurately. A full description of each facet of the study, from conceptualisation through to data analysis, holds the researcher accountable in ensuring that the study results are an accurate reflection of the participants’ behaviours, attitudes, and opinions. (Andres 2012, p. 116).

Reliability refers to the extent to which the findings of the study can be replicated. In a survey study the instrument should therefore be designed so that the respondents would answer the item in the same way if they were asked to repeat answering the questions. Reliability also means the extent to which a study can be replicated with similar samples in similar conditions to produce similar results. As the social world is messy, exact replication of the research project is highly unlikely. But if similar trends in the findings can be determined, the measures and methods used can be considered to be reliable. (Andres 2012, p. 123).

One fact that might have decreased the reliability of this study is the language issue. The survey instrument was only available in English, which was not the mother tongue of most of the respondents. The researcher strived towards minimising the language issue by utilising multilingual team members as translators when needed. But as the researcher did not master all the different languages herself, she was not capable of checking that all the translations given by a team member where precise. This can perhaps explain why so many of the respondents reported that they take supplements for a disease. It is likely that

the respondents refer to a more temporary condition such as being sick. The researcher also tried to minimise any confusions by being present at the time when the respondents filled in the survey, being available to answer questions and to clarify terms whenever asked.

The reliability issue can also be considered to have increased through utilising a mixed method approach when information was collected both through a survey instrument and during a focus group interview. In this way, the researcher could receive broader knowledge about the issue, but also mutually validate the findings of both approaches.

8.2 Ethical issues

The protection of the subjects' interests and well-being by protecting their identity is a concern, especially in survey research. Anonymity should be guaranteed when conducting survey research. A research project can guarantee anonymity when the people who read the research as well as the researcher cannot identify a given response with a given respondent. (Babbie 2002, p. 56-58). Therefore, personal information such as name and age were not included in the questionnaire of this study. The athletes were also asked to return the questionnaires by dropping them in a box, which further increased the anonymity.

In focus groups, as in all other research, ethical issues such as confidentiality, anonymity and impartiality must also be considered. Anonymity cannot be guaranteed in traditional focus group interviews as members of the group and the moderator or researcher are able to identify other participants. In focus group interviews the researcher or moderator must therefore assure that the answers given by a respondent will directly connected to him/her unless so agreed. A research project guarantees confidentiality when a researcher can identify a person's response but does not share this information publicly. Confidentiality can however be problematic in group interviews if members of the group discuss the findings in other settings and situations. (Daymon & Holloway 2011, p. 253-254; Babbie 2002, p. 59).

In this research project none of the answers can be directly connected to any particular respondent in order to guarantee confidentiality.

8.3 Suggestions for further research

In this research the main target was collect information from the floorball players in order to develop the IFF anti-doping education programme. Based on the empirical data collected, only a few of the athletes (22,3 %) had received any anti-doping education prior to this study. It could therefore be of interest to conduct a follow up study, to see how this might have changed.

It could also be of interest to generally see how much more emphasis has been put on anti-doping education in sports, since the new directions were published by the World Anti-Doping Agency in 2015. Comparisons could also be made between different countries and/or different sports, to see if differences exist. This could then assist the anti-doping organisations in planning their education activities and to fill in the possible education gaps, if or when they exist.

As mentioned earlier in this study, the IFF also needs to continuously evaluate its anti-doping education approach and react to any possible upcoming demands. Also, as previously mentioned, the IFF needs to focus its education efforts on the athlete support personnel, including team managers, coaches, team doctors and other team staff. Further research could therefore be suggested to find out the specific needs of these groups, including their education needs, education content needs and preferable timing of education.

8.4 Researcher's self-assessment

For the researcher anti-doping education is a very familiar topic from years before. Both due to the fact that the researcher is responsible for all the anti-doping work in the International Floorball Federation, but also due to the fact that the researcher has been a member of the WADA Education Committee for two three-year long terms (2012-2014 and 2015-2017).

During this time, it became very evident that anti-doping education is a very important issue in today's world of sport and becoming even more important. The requirements of the international sport federations have also increased, which has put more pressure on the federations to increase the education resources and efforts. Still there are not many practical and easy solutions available. Not least because of the language issues of the international sport federations. An international sport federation usually has one or two official languages, but still the federation should be responsible for the education of athletes that speak over 50 languages and might not understand the federation's official language. This was one of the obstacles that the researcher faced during the process and it became quite

evident that better cooperation is needed with the national member associations as well as the national anti-doping organisations to solve the issue.

Another issue is related to the differences between sports. There are differences in the cultures of the sports, the physical demands, the money involved in the sport etc. Therefore, one single anti-doping education approach might not fit all athletes and all sport organisations. An anti-doping education programme best suitable for professional cycling or for example athletics might differ a lot from the kind of anti-doping education needed in floorball. Therefore, the researcher came to the conclusion that the logical starting point was to ask the players themselves instead of relying solely on what previous research and literature including other sports have to say. The researcher has had a good knowledge of existing social science research within the field from before, but the question has more been to find literature that is essential for this particular context.

After finalising the research, both the researcher and the target organisation will have proper information and tools to make the right choices and invest in anti-doping education where its most needed and wanted.

This project was already started in the end of year 2015 and there has been some hiccups during the way. The world's most perfect baby born in October 2016 has been the main cause for some interruptions in the process, but in the end the project was quite easily finalised during baby's nap times when the researcher was on study leave.

9 IFF Anti-Doping Education Programme

Based on recent social science research and the findings of this study an anti-doping education programme has been developed. As previously mentioned, the purpose of this project was not to plan an education programme including all possible details, but rather to decide upon the main target groups and the key principles of the programme.

The anti-doping education programmes below will provide the IFF with a clear view of where to start, what to prioritise and when to start the actions. Based on the programme the IFF can plan and develop more detailed activities for each different target group. The IFF shall also include anti-doping topics in a variety of occasions when the IFF has a direct contact with the target groups. These occasions are for example the captains' meetings and technical meetings, which are always organised prior to the start of the event. In addition, there are other occasions which are not that regularly organised that could

include anti-doping topics when needed. These are for example the athletes' commission meetings and different meetings organised for the IFF member associations.

9.1 IFF Anti-Doping Education Programme for U19

Based on the available literature and the finding in this research, the anti-doping education should start as early as possible. The youngest age category that the IFF organises events for, is the under 19 age group and therefore the 15-19 year olds should be the IFF's main target group.

The possibility to utilise other athletes, like for example IFF athletes' commission members, when organising anti-doping education for this target group should be investigated. The aim with peer-led teaching is to get the buy-in from the athletes.

Table 7. IFF Anti-Doping Education Programme for U19

Target group	Goal	Activity	Responsible organisation	Time	Priority
U19 teams entering IFF *WFCs	Floorball players shall understand the consequences of doping and the importance of staying clean	IFF to be in contact with the *'MAs and/or **'NADOs to make sure that all teams entering the Events have completed anti-doping education sessions	IFF responsible for initiating the cooperation between the MAs and NADOs	Initial contact latest six months prior to the IFF Event	Highest priority
	All U19 players participating in the IFF Events should be educated in a wide range of anti-doping topics such as: prohibited substances and nutritional supplements, the athletes' right and responsibilities as well as testing and therapeutic use exemptions	IFF to develop interactive anti-doping seminars for those teams who have not completed a national anti-doping session prior to the IFF Event	MAs to run or book an anti-doping session nationally and organise a session for those teams who have not received anti-doping education	IFF education session during Event	Starting immediately
		Utilising E-learning programmes	IFF to oversee that all teams have completed a session		
		Anti-doping topics presented at the captains' meetings	IFF to plan anti-doping topics for the captains' meetings		
		Peer-led teaching	IFF to investigate possibility for e.g. athletes' commission members to participate in an U19 education session		

**WFCs= World Floorball Championships, *'MAs= IFF Member Associations, *'*NADOs= National Anti-Doping Organisations*

9.2 IFF Anti-Doping Education Programme for new and under resourced countries

Countries that are entering the IFF Events for the first time as well as countries without enough anti-doping resources nationally should also have high priority. By prioritising these target groups, the IFF can fill the anti-doping education gaps that exist and give all floorball players the possibility to receive anti-doping education.

Table 8. IFF Anti-Doping Education Programme for new and under resourced countries

Target group	Goal	Activity	Responsible organisation	Time	Priority
New countries/countries without proper anti-doping efforts entering Men's & Women's IFF *WFCs	Floorball players shall understand the consequences of doping and the importance of staying clean	IFF to be in contact with the **MAs and/or ***NADOs to make sure that all teams entering the Events have completed anti-doping education sessions	IFF responsible for initiating the cooperation between the MAs and NADOs	Initial contact latest six months prior to the IFF Event	2nd highest priority
	All new teams participating in the IFF Events should be educated in a wide range of anti-doping topics such as: prohibited substances and nutritional supplements, the athletes' right and responsibilities as well as testing and therapeutic use exemptions	IFF to develop interactive anti-doping seminars for those teams who have not completed a national anti-doping session prior to the IFF Event	MAs to run or book an anti-doping session nationally	IFF education session during Event	Starting within 12 months
		Utilising E-learning programmes	IFF to oversee that all teams have completed a session and organise a session for those teams who have not received anti-doping education		
		Anti-doping topics presented at the captains' meetings	IFF to plan anti-doping topics for the captains' meetings		

**WFCs= World Floorball Championships, **MAs= IFF Member Associations, ***NADOs= National Anti-Doping Organisations*

9.3 IFF Anti-Doping Education Programme for Adults

All floorball players should have the possibility to receive anti-doping education. Therefore, the IFF should make sure that accurate and updated anti-doping information is given to the teams when they enter the IFF Events. The teams entering the major IFF Events should also have the possibility to book an anti-doping session from the IFF. In addition,

IFF should when deemed necessary, when for example new rules come to force or when specific topics need to be addressed, make education mandatory.

Table 9. IFF Anti-Doping Education Programme for Adults

Target group	Goal	Activity	Responsible organisation	Time	Priority
Teams entering Men's & Women's IFF *WFCs.	Floorball players shall understand the consequences of doping and the importance of staying clean	IFF to be in contact with the **MAs to inform about the importance of anti-doping education and about the available anti-doping education possibilities	IFF responsible for informing the MAs about the education importance and different possibilities to receive education	Initial contact latest six months prior to the IFF Event	High priority
	All teams participating in the IFF Events should have the possibility to receive anti-doping education when needed	IFF to develop interactive anti-doping seminars for those teams who have requested for it	MAs to decide about teams' education needs and possibly book and attend national anti-doping education session or book a session from the IFF	IFF education session during Event	Starting within 12 months .
		Utilising E-learning programmes	IFF to plan anti-doping topics for the captains' meetings		
		Anti-doping topics presented at the captains' meetings			

**WFCs= World Floorball Championships, **MAs= IFF Member Associations,*

9.4 IFF Anti-Doping Education Programme for Athlete Entourage

Based on available social science research and the questionnaire findings in this study, the athlete entourage including for example team managers, doctors, physiotherapists, coaches and other team members are the key persons around the athletes that they ask advice from. Therefore, the IFF should also start focusing more on this group and investigate their anti-doping education needs in more detail.

Table 10. IFF Anti-Doping Education Programme for Athlete Entourage

Target group	Goal	Activity	Responsible organisation	Time	Priority
Athlete entourage	The athlete entourage shall understand the importance of protecting clean athletes	IFF to investigate the need of anti-doping education for the athletes' entourage	IFF responsible for investigating the athlete entourage education need	IFF to collect input from athlete entourage at IFF Events	Future priority
	All persons in the teams that are responsible for athletes' health and wellbeing should receive anti-doping	Based on the results the IFF shall develop the athlete entourage anti-doping education approach	*MAs to give their views about existing need		Starting after 12 months

	education when needed				
		Utilising E-learning programmes	IFF to plan anti-doping topics for the technical meetings		
		Anti-doping topics presented at the technical meeting (for team managers etc.)			

**MAs= IFF Member Associations*

9.5 IFF Anti-Doping Awareness Campaigns for Floorball Fans

The goal of the IFF anti-doping awareness campaigns is to increase the awareness of athletes, fans, spectators and media of the importance of playing clean, respecting the spirit of true sport and fair play. The aim is also to promote the image of floorball as a clean and fair sport.

The IFF has run the Say NO! to Doping campaign, which was launched in partnership with the World Anti-Doping Agency in 2010, at the major IFF Events. The IFF should continue to run campaigns and develop them by listening to the voice of the athletes. The campaigns should preferably include a positive message.

Table 11. IFF Anti-Doping Awareness Campaigns for Floorball Fans

Target group	Goal	Activity	Responsible organisation	Time	Priority
Fans, athletes, spectators, media	Floorball shall be viewed as a fair sport without doping	IFF to run anti-doping awareness campaigns that include a positive message	IFF ask for opinions and views from the IFF athletes' commission	IFF anti-doping awareness campaigns to be run at major IFF Events	Continuous priority
		IFF to investigate the possibility of collaboration with *MAs and/or **NADOs for running such campaigns	IFF to be in contact with MAs and/or NADOs for planning the launch of campaigns		Campaigns to be further developed
		Other topics related to fair play can be added to the campaigns			

**MAs= IFF Member Associations, **NADOs= National Anti-Doping Organisations*

References

Adair, D. 2016. Taking her medicine: Maria Sharapova grand slammed. The Conversation. URL: http://theconversation.com/taking-her-medicine-maria-sharapova-grand-slammed-56175

Ajzen, I. 1991. The Theory of Planned Behavior. Organizational Behaviour and Human Decision Processes. Academic Press. Volume 50, Issue 2.

Alasuutari, P. 1994. Laadullinen tutkimus. 3rd edition. Vastapaino. Tampere.

Alvehus, J. 2013. Skriva uppsats med kvalitativ metod: En handbook. Liber. Stockholm.

Andres, L. 2012. Designing & Doing Survey Research. Sage. London.

Aschwanden, C. Athletes, Stop Taking Supplements. They're expensive, they don't improve performance, and they might make you test positive for dope. Health and Science July 26th, 2012. URL: http://www.slate.com/articles/health_and_science/medical_examiner/2012/07/dietary_supplements_at_the_olympics_why_athletes_risk_false_drug_charges_.html

Australian Sports Anti-Doping Authority. Supplement ingredients banned, Oct. 16th, 2017. URL: https://www.asada.gov.au/news/supplement-ingredients-banned.

Axon, R. 2017. As Sharapova returns, WADA could learn from its handling of meldonium ban. USA Today Apr. 24th, 2017. URL: https://www.usatoday.com/story/sports/olympics/2017/04/23/maria-sharapova-returns-wada-meldonium-ban/100824488/

Babbie, E. 2002. The Basics of Social Research. 2nd edition. Wadsworth/Thomson Learning. Belmont.

Backhouse, S.H; Whitaker, L; Petróczi, A. Gateway to doping? Supplement use in the context of preferred competitive situations, doping attitude, beliefs, and norms. Scandinavian Journal of Medicine & Science in sports, 2013: 23.

Backhouse et al. 2016. Social psychology of doping in sport: a mixed-studies narrative synthesis. Prepared for the World Anti-Doping Agency by the Institute for Sport, Physical

Activity and Leisure. Leeds Beckett University. URL: https://www.wada-ama.org/sites/default/files/resources/files/literature_review_update_-_final_2016.pdf

Bachman, R. Teen Sports Faces a Nutritional-Supplement Debate. A question of whether companies should market their products to young athletes. The Wall Street Journal, Jan. 11th, 2016. URL: https://www.wsj.com/articles/teen-sports-faces-a-nutritional-supplement-debate-1452556715?tesla=y

Brown, A. Carter's appeal against loss of Beijing 2008 4x100m gold to be heard today. The Sports Integrity Initiative, Nov 15th, 2017. URL: http://www.sportsintegrityinitiative.com/carters-appeal-loss-beijing-2008-4x100m-gold-heard-today/

Butler, N. Meldonium crisis contributes to 26.4 per increase in doping cases, WADA report reveals. Insidethegames, Aug. 25th, 2017. URL: https://www.insidethegames.biz/articles/1054529/meldonium-crisis-contributes-to-264-per-increase-in-doping-cases-wada-report-reveals

Chinoko, C. Anti-Doping body to intensify awareness. The Nation, Feb. 7th, 2016. URL: http://mwnation.com/anti-doping-body-to-intensify-awareness/

Collins et al. 2012. Why Athletes say No to Doping? Examining the reasons underpinning athletes' decision not to dope. Institute of Coaching and Performance, University of Central Lancashire. URL: https://www.wada-ama.org/sites/default/files/resources/files/collins-final-2012-en_0.pdf

Creswell, J. & Plano Clark, V. 2017. Designing and conducting mixed methods Research. 3rd ed. SAGE Publications, Inc. Thousand Oaks.

Daymon, C. & Holloway, I. 2011. Qualitative research methods in public relations and marketing communications. 2nd ed. Routledge. Abingdon, Oxon.

Dingle, S. Rio 2016: Former East German athletes with doping history warn Russians 'it's not worth it'. Australian Broadcasting Corporation, Aug. 17th, 2916. URL: http://www.abc.net.au/news/2016-08-16/athletes-with-doping-past-tell-russia-not-worth-it/7722080

Donovan, R. The Sport Drug Model presentation at Values-Based Education Conference, Oct. 2nd, 2015. Canadian Centre for Ethics in Sport and World Anti-Doping Agency. Montreal. Canada.

Dvorak, J. et al. Time for change: a roadmap to guide the implementation of the World Anti-Doping Code 2015. British Journal of Sports Medicine, 2014: 48.

Flick, U. 2002. An Introduction to Qualitative Research. Sage Publications 2nd edition. London.

Gerdes, B. 2017. The greatest disappointment of my life. Blogspot Feb. 3rd, 2017. URL: http://californiatraining.blogspot.fi/2017/02/the-greatest-disappointment-of-my-life.html

Hamilton, T & Coyle, D. 2012. The Secret Race. Inside the Hidden World of the Tour de France: Doping, Cover-Ups, and Winning at All Costs. Bantam Books. New York.

Harris-Fry, N. Check Your Sports Supplements For DMAA, The Drug That Cost Bolt His Gold. Coachmag, Jan. 31st, 2017. URL: http://www.coachmag.co.uk/supplements/6287/check-your-sports-supplements-for-dmaa-the-drug-that-cost-bolt-his-gold

Hart, S. Asafa Powell blames positive drug test on supplements given to him by new physiotherapist. The Telegraph, Jul. 15th, 2013. URL: http://www.telegraph.co.uk/sport/othersports/athletics/10181366/Asafa-Powell-blames-positive-drug-test-on-supplements-given-to-him-by-new-physiotherapist.html

Hermann, A & Henneberg, M. Anti-Doping Systems in Sports are Doomed to Fail: A Probability and Cost Analysis. Journal of Sports Medicine & Doping Studies, Nov. 7th, 2014. URL: http://dx.doi.org/10.4172/2161-0673.1000148

Hildebrandt, T. Gateways to Appearance and Performance Enhancing Drug Use. Doping in recreational sports conference. Sept. 24th – 25th, 2015. Helsinki.

Hirsijärvi, S. et al. 1997. Tutki ja kirjoita. Kirjayhtymä. Helsinki.

Hobson, K. Some Fat-Burning Supplements Contain Banned Stimulant Drug. National Public Radio, Apr. 7th, 2016. URL: http://www.npr.org/sections/health-shots/2016/04/07/473247150/some-fat-burning-supplements-contain-banned-stimulant-drug?sc=17&f=1001

Houlihan, B. Detection and education in anti-doping policy: a review of current issues and an assessment of future prospects. Hitotsubashi Journal of Arts and Sciences. 2008: 49 (1). URL: https://pdfs.semanticscholar.org/5343/5d313770a1e557b40d710dbd682fc89765a3.pdf

Hulmi, J. Enhancing muscle mass and function: comparison between different strategies. Doping in recreational sports conference. Sept. 24th – 25th, 2015. Helsinki.

IOC Nutritional Supplements study points to need for greater quality control. IOC Press release, Apr. 4th, 2002. URL: https://www.olympic.org/news/ioc-nutritional-supplements-study-points-to-need-for-greater-quality-control

Leppilampi, A. 2002. Yhteistoiminnallinen oppiminen aikuiskoulutuksessa, article in Sahlberg & Sharan (ed.) Yhteistoiminnallisen oppimisen käsikirja. WS Bookwell Oy. Porvoo.

Lindqvist, M. Hemliga steroidinjektioner – var går gränsen för dopning? Hufvudstadsbladet, March 6th, 2018.

Lundell, T. 2018. Tiedettä vai taitavaa markkinointia - kuluttaja ”vitamiiniviidakossa”. MOT 9.4.2018. URL: https://yle.fi/aihe/artikkeli/2018/04/09/tiedetta-vai-taitavaa-markkinointia-kuluttaja-vitamiiniviidakossa

MacCallum, D. 2009. Discourse Dynamics in Participatory Planning. Opening the Bureaucracy to Strangers. Ashage Publishing Limited.

Mammoser, G. Debate Heats Up Over SARMs Fitness Supplements. Healthline, Jan. 10th, 2018. URL: https://www.healthline.com/health-news/debate-heats-up-over-sarms-fitness-supplements#1

Maughan, R. 2015. Hazards of Supplement Use in Recreational Sports. Doping in recreational sports conference. Sept. 24th – 25th, 2015. Helsinki.

Maughan, R. WADA Talks with Ron Maughan, Feb. 10th, 2016. WADA Talks video interview series featuring dynamic exchanges with a variety of thought leaders from the world of clean sport. URL: https://www.wada-ama.org/en/media/news/2016-02/wada-talks-with-ron-maughan

McCowan, T. 2009. Rethinking Citizenship Education, A Curriculum for Participatory Democracy. Continuum International Publishing Group. London.

Ntoumanis, N. 2012. A statistical synthesis of the literature on personal and situational variables that predict doping in physical activity settings. University of Birmingham, Aristotle University of Thessaloniki and Leeds Metropolitan University. URL: https://www.wada-ama.org/sites/default/files/resources/files/2012%20funded%20-%20Ntoumanis%20-%20final%20report%20%28Statistical%20synthesis%29.pdf

Rogers, A. 2009. Non-Formal Education. Flexible Schooling and Participatory Education? Comparative Education Research Centre. Hong Kong.

Spector, T. The sun goes down on Vitamin D: why I changed my mind about this celebrated supplement. The Conversation, Jan. 6th, 2016: https://theconversation.com/the-sun-goes-down-on-vitamin-d-why-i-changed-my-mind-about-this-celebrated-supplement-52725

Spector, T. What supplements do scientists use, and why? The Conversation, Nov. 11th, 2018. URL: https://theconversation.com/amp/what-supplements-do-scientists-use-and-why-87954

UK Anti-Doping article. UK Anti-Doping issues supplement warning, Nov. 4th, 2010. URL: http://ukad.org.uk/news/article/supplements-warning

UK Anti-Doping article. Sport and Exercise Nutritionists Commit to Protect Clean Sport, May 25th, 2016. URL: http://www.ukad.org.uk/news/article/sport-and-exercise-nutritionists-commit-to-protect-clean-sport/

US Anti-Doping Agency. Understanding Dietary Supplement Regulation. URL: https://www.usada.org/substances/supplement-411/realize-safety-issues-exist/laws-dont-protect/. Accessed: March 1st, 2018.

Values-Based Education Conference Oct. 2nd – 3rd, 2015. Canadian Centre for Ethics in Sport and World Anti-Doping Agency. Canada.

World Anti-Doping Agency. 2018. Technical Document for Sport Specific Analysis (TDSSA). Version 3.1. URL: https://www.wada-ama.org/en/resources/the-code/tdssa-technical-document-for-sport-specific-analysis

World Anti-Doping Agency. 2016. Guidelines for Optimizing Collaboration Between International Federations and National Anti-Doping Organizations. Version 1.0. URL: https://www.wada-ama.org/sites/default/files/resources/files/wada-if-nado-collaboration-guidelines_en.pdf

World Anti-Doping Agency. 2016. Model for Core Programs: Information/Education Guidelines to Prevent Doping in Sport. Version 3.0. URL: https://www.wada-ama.org/sites/default/files/resources/files/wada_guidelines_information_education_2016_v3.0_en.pdf

World Anti-Doping Agency. 2015. Significant Changes Between the 2009 Code and the 2015 Code, Version 4.0. URL: https://www.wada-ama.org/en/resources/the-code/significant-changes-between-the-2009-code-and-the-2015-code

World Anti-Doping Code (Code) 2015. World Anti-Doping Agency. URL: https://www.wada-ama.org/en/resources/the-code/world-anti-doping-code

World Anti-Doping Code Prohibited List 2018. World Anti-Doping Agency. URL: https://www.wada-ama.org/en/resources/science-medicine/prohibited-list

Wylleman, P. et al. 2016. A lifespan and holistic approach to the influence of career transitions on athletes' drug-taking behaviours. URL: https://www.wada-ama.org/sites/default/files/resources/files/port_a_lifespan_and_holistic_approach_in_studying_the_influence_of_career_transitions_on_athletes_drug-taking_behaviours_2.pdf

Young, D. Kiprop's Agents Investigated in Kenya For Doping. Flotrack, July 6th, 2016. URL: https://www.flotrack.org/articles/5052861-kiprops-agents-investigated-in-kenya-for-doping

Appendices

Appendix 1. Definitions

Defined terms that are used in this thesis as defined by the World Anti-Doping Code, the World Anti-Doping Agency and in the IFF Anti-Doping Rules.

Anti-Doping Organisation: A signatory that is responsible for adopting rules for initiating, implementing or enforcing any part of the doping control process. This includes, for example, the International Olympic Committee, the International Paralympic Committee, other Major Event Organisations that conduct testing at their Events, WADA, International Federations, and National Anti-Doping Organisations.

Code: The World Anti-Doping Code.

Contaminated Product: A product that contains a prohibited substance that is not disclosed on the product label or in information available in a reasonable Internet search.

Doping Control: All steps and processes from test distribution planning through to ultimate disposition of any appeal including all steps and processes in between such as provision of whereabouts information, sample collection and handling, laboratory analysis, therapeutic Use Exemptions, results management and hearings.

Event: A series of individual competitions conducted together under one ruling body (e.g. IFF World Championships).

In-Competition: “In-competition” means the period commencing twelve hours before a competition in which the athlete is scheduled to participate through the end of such competition and the sample collection process related to such competition.

National Anti-Doping Organisation (NADO): The entity(ies) designated by each country as possessing the primary authority and responsibility to adopt and implement anti-doping rules, direct the collection of samples, the management of test results, and the conduct of hearings at the national level. If this designation has not been made by the competent public authority(ies), the entity shall be the country’s National Olympic Committee or its designee.

Out-of-Competition: Any period which is not in-competition.

Prohibited List: The List identifying the Prohibited Substances and Prohibited Methods.

Prohibited Substance: Any substance, or class of substances, so described on the Prohibited List.

Sample or Specimen: Any biological material collected for the purposes of Doping Control.

Signatories: Those entities signing the Code and agreeing to comply with the Code, as provided in Article 23 of the Code.

Test: Any combination of sample(s) collected (and analysed) from a single athlete in a single sample collection session.

Test Distribution Plan: A document written by an anti-doping organisation that plans testing on athletes over whom it has testing authority, in accordance with the requirements of Article 4 of the International Standard for Testing and Investigations.

Testing: The parts of the doping control process involving test distribution planning, sample collection, sample handling, and sample transport to the laboratory.

Testing Pool: The pool of athletes established by the IFF who shall provide whereabouts information for the purpose of the out-of-competition testing established in the IFF's test distribution plan.

Therapeutic Use Exemption: Athletes may have illnesses or conditions that require them to take particular medications. If the medication an athlete is required to take to treat an illness or condition happens to fall under the Prohibited List, a therapeutic use exemption (TUE) may give that athlete the authorisation to take the needed medicine.

Values-based education: Education that encourages athletes/coaches etc. to adopt and live positive values.

WADA: The World Anti-Doping Agency.

Appendix 2. The questions used in the member survey

Anti-Doping Education Questionnaire			page 1		
Team (country):		X	*Player*	X	*Official*
Previous Anti-Doping Education		X	*YES*	X	*NO*
mark/underline your answer					
If yes, when was the last time (year & month)?					
Who organised the activity?		X	*National Federation*		
mark the correct organisation(s)		X	*National Anti-Doping Agency*		
		X	*International Federation*		
		X	*Club team*		
		X	*Someone else, who:*		
What was the content?		X	*Prohibited Substances*		
mark all topics that were included in the previous anti-doping		X	*Sanctions*		
information and education session		X	*Athletes' rights*		
		X	*Athletes' responsibilities*		
		X	*Testing*		
		X	*Testing Pools*		
		X	*Therapeutic Use Exemptions (TUE)*		
		X	*Supplements*		
		X	*Something else, what:*		
How important would it be for you to receive more eduacation in the listed topics from a scale from 1-5					
1=not at all important /2=not that important /3=somewhat important /4=important /5= very important /(?)=impossible to say					
Prohibited Substances			1 2 3 4 5 (?)		
Sanctions			1 2 3 4 5 (?)		
Athletes' rights			1 2 3 4 5 (?)		
Athletes' responsibilities			1 2 3 4 5 (?)		
Testing			1 2 3 4 5 (?)		
Testing Pools			1 2 3 4 5 (?)		
Therapeutic Use Exemptions (TUE)			1 2 3 4 5 (?)		
Supplements			1 2 3 4 5 (?)		
Something else, what:			1 2 3 4 5 (?)		
At what age do you think the education should be received?		X	*Under 19*	X	*Over 19*
Would you understand anti-doping education in English?		X	*YES*	X	*NO*
Would you prefer anti-doping education in your own language?		X	*YES*	X	*NO*
mark/underline your answers					
Who do you think should organise the anti-doping education?		X	*National Federation*		
(mark/underline the correct organisation(s))		X	*National Anti-Doping Agency*		
		X	*International Federation*		
		X	*Club team*		
		X	*Someone else, who:*		
GO TO NEXT PAGE!					

Anti-Doping Education Questionnaire			page 2	
What sources would be important in delivering the education from a scale from 1-5?				
1=not at all important /2=not that important /3=somewhat important /4=important /5= very important /(?)=impossible to say				
E-learning programmes			1 2 3 4 5 (?)	
Face to face anti-doping sessions at Events			1 2 3 4 5 (?)	
Websites			1 2 3 4 5 (?)	
Anti-Doping Newsletter			1 2 3 4 5 (?)	
IFF Athletes' Committee member			1 2 3 4 5 (?)	
Team captains (who have been educated)			1 2 3 4 5 (?)	
Athletes from other sports			1 2 3 4 5 (?)	
Social media			1 2 3 4 5 (?)	
Other channel(s), which:_____			1 2 3 4 5	
Do you use nutritional supplements?		X	*YES*	X *NO*
If you use supplements, what supplements do you use and how important are they from a scale from 1-5?				
1=not at all important/2=not that important/3=somewhat important/4=important/5= very important/(?)=impossible to say/(X)= I don't use this				
Vitamins			1 2 3 4 5 (?) (X)	
Minerals			1 2 3 4 5 (?) (X)	
Fat burners			1 2 3 4 5 (?) (X)	
Energy drinks			1 2 3 4 5 (?) (X)	
Energy bars			1 2 3 4 5 (?) (X)	
Recovery drinks			1 2 3 4 5 (?) (X)	
Extra protein			1 2 3 4 5 (?) (X)	
Extra carbohydrate			1 2 3 4 5 (?) (X)	
*Something else,. What:*_____			1 2 3 4 5 (?) (X)	
How important are the different reasons for you to use supplements from a 1-5 scale?				
1=not at all important/2=not that important/3=somewhat important/4=important/5= very important/(?)=impossible to say/(X)= I don't use this				
I believe I need it			1 2 3 4 5 (?) (X)	
Someone else thinks I need it			1 2 3 4 5 (?) (X)	
Weight gain			1 2 3 4 5 (?) (X)	
Weight loss			1 2 3 4 5 (?) (X)	
Recovery			1 2 3 4 5 (?) (X)	
I have a disease			1 2 3 4 5 (?) (X)	
I take it just in case			1 2 3 4 5 (?) (X)	
*Some other reason, What:*_____			1 2 3 4 5	
How do you know the supplement you are using does not contain		X	*I trust the text on the labels*	
any prohibited substances?		X	*I have asked the producers to certify it is safe*	
(mark the correct answer(s))		X	*I have asked for an experts advice*	
		X	*I trust my team member who recommended it*	
		X	*I bought it from pharmacy and believe these products are safe*	
		X	*I have checked the substance through on-line resources like:*	
		X	*www.informed-sport.com* *www.supplement411.org* *www.consumerlab.com*	
		X	*I used google*	
Do you want more Anti-Doping Information by e-mail?		X	*YES*	X *NO*
			E-mail address:	

THANK YOU FOR YOUR TIME!