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Using performance-enhancing substances when exercising the human body

- A study of gym users from a social worker perspective

Ulrika Gustafsson & Isabelle Ravelius

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Handledare: My Lilja
Examinator: Peter Öberg

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Abstract

The aim of this study was to investigate how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances. A self-completion questionnaire was handed to 246 gym users at seven different gyms in Södertälje municipality, Sweden. Connell's masculinity theory and Giddens's self-identity theory were used to interpret and analyze the results. The result showed that it is not common among gym users to use doping substances (Anabolic Androgen Steroids, AAS): 4 percent had occasionally used AAS. On the other hand, it was common to use dietary supplements among gym users; 79 percent used some type of dietary supplement. A positive correlation between exercising at the gym a couple of times a week and the use of dietary supplements was shown. The two most common purposes for using performance-enhancing substances were to increase physical appearance and get bigger muscles. This study also discussed the risks and effects of using performance-enhancing substances that are related to social problems.

Key Words: Performance-enhancing substances, AAS, gym, dietary supplements, body ideal

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1. Introduction

Jurisdiction regarding doping substances and doping use was established within Swedish national law in 1992 (SFS 1991:1969). With this law, doping substances became illegal and simultaneously acknowledged as a societal problem. The use of doping substances is thus a criminal action per se, although the important facts that this study wants to highlight are the different physical and psychosocial side-effects which are relevant for social work. The use of the doping substance anabolic androgenic steroids (AAS) could lead to social problems. Research shows that depression is the most common symptom among AAS users and treatment is often required in order for the AAS user to get healthy (Skårberg, 2009; Hall & Chapman, 2005). Aggression is another side effect of AAS use and violence, impulsiveness and injudiciousness can lead the afflicted person into hurting himself or others (Klötz, 2008; Grann et al., 2005). According to Grann et al., (2005) many of all the violent crimes are perpetrated by people affected by substances. The negative affects impact on individuals and society in different ways, as would be the case with violent criminal activity (Moberg & Hermansson, 2006; Skårberg, 2009). There are various motivations for using doping substances or other performance-enhancing substances, like dietary supplements. One motivation that this study will discuss is the pursuit of “body ideals”. Body ideals exist in our society, and are shown by different types of media. It may be tempting for individuals who exercise to use performance-enhancing substances in order to achieve a certain body ideal, even if such use poses a risk to the health and quality of life experienced for those who use doping substances (Mickelsson, 2011, Pope et al., 1999).

1.1 Background

Over the years, there has been a significant change in the type of labor being performed in the Swedish workplace, according to Moberg and Hermansson (2006). In earlier years, industries required physical and manual labor and provided job opportunities to ordinary men whose physical body strength played an important role. The human body was vital for the performance of the job, and also as a symbol for masculinity. The industries have today been replaced to a great extent by technological advancements in production, or the older industries requiring manual labor have moved abroad where the

labor force is less expensive. The main work tasks for men have therefore changed over time from physical, strength-intensive tasks to more knowledge-intensive tasks. Along with the reduction in physically-demanding jobs, the discourse about masculinity has changed and has created the need for new ways in which men can display their masculinity. Since jobs within the older industries were more physically demanding, the discourse about exercising at a gym and the use of performance-enhancing substances did not exist to the same extent as it does today (Ibid). According to earlier research (Hoff, 2013; Skårberg, 2009; Morberg & Hermansson, 2006) it has shown that it is more common among men than women to use AAS, therefore our study will give more attention to men than women thus Connell's masculinity theory will be used for analyzing the result. The women participation will still be needed in our study in order to see if there is a difference regarding the use of performance-enhancing substances related to gender.

Söderström (1999) explains in his dissertation that physical activity today takes place in one's spare-time outside the work environment. In the 1970's, the development of gyms started and in the 1990's the presence of gyms increased remarkably in Sweden and today one can find a gym on almost every corner. Earlier the gym was used by bodybuilders, while nowadays the gym is used by ordinary people who exercise with other purposes than becoming a bodybuilder (Ibid). It is possible to assume that the gym is a new arena where some of today's men can demonstrate their masculinity according to Connell's masculinity theory (Connell, 1999). Within the so called 'gym culture,' a new issue has arisen where some gym users take shortcuts by using performance-enhancing substances in order to build their bodies. The use of performance-enhancing substances occurred first within the elite world of competitive sports, but by another name: doping. Doping no longer exists only within the elite world of sport. Today, it exists within the gym culture. Doping substances and other performance-enhancing substances are used by gym members (i.e. non-elite sportsmen), whose aim is obviously not to win a race or a game, but simply to improve their muscular physique or general physical performance (Skårberg et al., 2008). There is general difficulty in defining what is meant by "doping", but the International Olympic Committee explains doping as the use of illegal substances and methods with the aim to enhance performance within sports (Wada, 2014). Doping involves the use of hormonal substances or other

chemical substances to increase the volume and the strength of the muscles (Dopingjouren, 2014). Anabolic androgenic steroids (AAS) are the most common hormonal substance. One could think that doping is a rather new concept, but doping dates back to Ancient Greece. In Ancient Greece, doping consisted of using testicles from sheep and substances from plants, such as the opium plant. AAS was later used by German soldiers to make them more aggressive, fearless, and to strengthen their performance and avoid fatigue. AAS was introduced within the elite sport world in the 1950's, and reached its peak in the 1980's and has then decreased (Morberg & Hermansson, 2006). Restrictions against doping appeared at the Olympic Games, in order to uphold a fair competition. Different anti-doping committees and agencies have been established (Wada, 2014). In 1992 Sweden was the first country in Europe that introduced a law regarding doping (*Lag [1991:1969] om förbud mot vissa dopningsmedel*). This law was directed towards the use of doping outside the elite world of sport jurisdiction i.e. towards the general population that uses doping substances (Mickelsson, 2009). The spread of doping to non-elite sportsmen has caused doping to become a social problem of its own, because of the adverse effects doping has on the individual user, the local community, the regional community, and even the global community. Research has shown a correlation between the use of AAS and other risk behaviors, like the misuse of alcohol and narcotics which, in turn, is related to aggression, violence, and criminality (Skårberg, 2009).

The spread of doping beyond the elite world of athletic competition into mainstream society, along with its many negative societal effects, makes the topic of doping relevant for social work. It would be interesting to open a discussion about why individuals risk their health and life situations for a body ideal. In order to do so this study will investigate how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances.

1.2 Aim

This study aims to investigate how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances. The study was conducted in Södertälje municipality¹.

1.3 Research questions

In order to reach the study's aim, following research questions will be measured:

- How common is it among gym users to use doping substances and dietary supplements?
- What are the motivations for using dietary supplements and/or doping substances?
- What are the attitudes among gym users towards the use of doping substances?
- How does the frequency of exercise relate to the use of performance-enhancing substances?

1.4 Essay disposition

This study starts with an introduction where the chosen subject is presented in connection to social problems, followed by a background of the issues. The introductory chapter will also present the aim of the study, the study's research questions, definition of important concepts that are relative to this study and the first chapter will end with an explanation of the study's scope and limitations. After the introductory chapter, earlier research will be described in order for the reader to obtain scientific knowledge of the issues discussed and grasp concepts related to the issues explained. This study emanates from social constructivism and uses Connell's masculinity theory and Giddens' self-identity theory as theoretical framework, which will be presented in chapter three. The

¹ Södertälje Municipality is located outside Stockholm and have approx. 85 000 inhabitants (Södertälje Kommun, 2014).

methodology chapter, the fourth chapter, will thereafter be described in detail in terms of sample size, procedure and data collection, as well as the validity and reliability of the study in order to clarify and provide a understanding of the method and the results. Thereafter, the results and analysis are presented with support from figures and connected to earlier research and to the theories chosen. The last chapter concludes the study with a discussion related to the results connected to the research aim and questions. The study ends with a short conclusion that gives suggestions for further research.

1.5 Definition of concepts

This section will define some important concepts that are repeatedly used in this study in order to avoid any misunderstandings. The concept *performance enhancing substances* refers to doping substances, anabolic androgenic steroids (AAS), synthetic substances, growth hormones, and dietary supplements.

Within the context of sports, *doping* means the illegal use of substances and methods to enhance one's athletic performance. *Doping substances* primarily include anabolic androgenic steroids (AAS), synthetic substances, and growth hormones, although, within the context of sports, the illegal use of other sorts of substances are included as well (Mickelsson, 2009; Wada, 2014). The use of doping substances has physical and psychosocial affects which impact on the health in different ways for instance the internal organs function, depression, aggression etc (Mickelsson, 2009; Skårberg, 2009). 1992 jurisdiction regarding doping substances and the use of doping substances was established within the Swedish law (SFS 1991:1969).

Anabolic androgenic steroids (AAS) refer to chemically produced male sex hormones (androgens) that are similar to the hormone testosterone. Anabolic steroids have the effect of building muscles and other body tissue. The androgenic steroids have the effect of enhancing the growth of beards, darkening one's voice, and contributing to coarser skin (Mickelsson, 2011).

Dietary supplements belong to the category of food. They are products that give the user a contribution of nutrients that complement the dietary content. Dietary supplements are sold in the form of tablets, capsules, powder, or other soluble forms containing vitamins and/or minerals (Dopingjouren, 2014).

1.6 Scope and limitations

This section addresses what this study includes and excludes. The sample of this study will be individuals who exercise at the gym and will not include those people who only take part in the gym's group-training classes. The questionnaire involves questions about exercising, use of dietary supplements, doping substances as well as attitudes towards doping. There are different types of doping substances, although this study will pay attention to the most known hormonal substances, which are anabolic androgenic steroids (AAS). This study will also look into the motivations for using performance-enhancing substances that are related to achieving a body ideal.

2. Earlier research

2.1 How doping is used in gym exercising

An American study by Parkinson and Evans (2006) identified trends in the nonmedical drug-taking habits of AAS users through an anonymous self-administered questionnaire. The questionnaire was posted on an Internet web page and received 500 responses. It showed that nearly four out of five AAS users are non-athletes who take AAS for cosmetic reasons. It also showed that 95 percent of the AAS users experienced subjective side effects (Ibid). According to Parkinson and Evans (2006), doping occurs during a limited time. The time-period or the cycle could differ in length, frequency, and by type of supplement taken. Thus, it is possible to follow a doping regime² once or repeatedly. The most common length of a doping cycle is between six and twelve weeks, but it differs from person to person. It is common with two to three doping cycles a year or doping can be maintained continuously without any brakes. Injections and ingestion of pills are the two most common doping methods. During the last twenty years, the size of the doping dose has increased and the doping regime is nowadays longer than during earlier years (Ibid). Parkinson and Evan's (2006) study also show that approximately 95% of those who use AAS also use other substances, like fat-reducing products, growth hormones, etc.

Skårberg et al., (2009)³ describe the use of drugs and reasons for the use among individuals that use AAS through semi-structured interviews and questionnaires. They showed that over half of the participants combine different types of AAS substances and other types of drugs during a doping regime in order to decrease negative side effects and/or increase the positive effects, such as the desired effect of generating bigger muscles. Cannabis was for instance used in order to get a better sleep, heroin to decrease pain, and amphetamine to increase endurance and burn fat.

² A doping regime is a certain period of time when the doping substances are used, for instance, a doping regime consisting of 12 days.

³ Skårbergs (2009) dissertation *Anabolic-androgenic steroid user in treatment - Social background, drug use patterns, and criminality* is based on four different studies which will be referred to separately as well as the whole dissertation.

In another study by Skårberg and Engström (2007), interviews were conducted with AAS users in treatment which were compared with questionnaires answered by people at a local gym in Örebro Sweden, with or without AAS history, in order to describe the social background and the current social situation of an AAS user. The study showed that AAS users were more likely to have histories of troubled childhood and socially disadvantaged backgrounds. Experiences of physical and/or mental abuse and dysfunctional relationships with parents were also shown as a cause for using AAS (Ibid). The media's portrayal of body ideals for men and women is also involved in the spreading use of AAS, which stimulates the social and cultural demands in pursuit of these body ideals, as explained by Pope et al., (2000) in their book '*The Andonis complex: the secret crisis of male body obsession*'. They highlight that it is more common and acceptable in contemporary society to use artificial methods in order to reconstruct the body figure. There is differing research (Skårberg & Engström, 2007; Pope et al., 2000) that finds reasons e.g. why a person may use performance-enhancing substances; therefore, it is hard to reach a consensus since there are obviously different factors that impact on the cause.

Hoff and Herngren (2008) made a quantitative study on both school pupils and gym users in order to get an overview of exercising habits and doping use in Kalmar, Sweden. The study got 591 responses and the result showed that four percent have sometimes engaged in or regularly engage in doping. This result indicates that doping was not very common among this study's respondents (Ibid).

2.2 Dietary supplements

According to an American study by Dodge and Jaccard (2006), there has been an increase in the number of legal dietary supplements claiming to improve one's physical performance. Their study examined the relation between high school sports participants and the use of anabolic steroids (AS) and legal performance-enhancing dietary supplements in young adulthood, as well as the relationship between AS and dietary supplements. Self-administered questionnaires were answered by approximately 15,000 adolescents and the result showed that males were more likely to use AS and legal dietary supplements than females. It also showed a positive relationship between AS use and the use of dietary supplements: that it is more likely to start use AS if dietary supplements are already being used by an individual.

Skårberg et al. (2008) made a study in Örebro, Sweden with the aim of improving our understanding of multiple drug use in patients seeking treatment at an addiction clinic for AAS-related problems. Through interviews with six patients having used AAS, the result showed dietary supplements to be an entrance to start using AAS. The interviewees said, they were advised to add AAS or other hormones in order to increase the effects on their physical performance.

An international research by Geyer, et al (2004) analyzed 634 non-hormonal nutritional supplements in thirteen countries (USA and in Europe), and from 215 different suppliers. The result showed that 15% of the supplements consisted of AAS substances without disclosure of it on the package. An implication of this is that people ingesting dietary supplements may not know that it may contain AAS. This indicates a problematic uncertainty and an inability to trust information on the supplements.

Leifman et al., (2009) made an observation study at gyms in Stockholm and it showed that gyms which sell dietary supplements have more people who use AAS than gyms which do not sell dietary supplements. This could be of interest as both the Dodge and Jaccard study (2006) and Skårbergs et al., study (2008) show a correlation between the use of dietary supplements and the use of AAS.

2.3 Effects of doping

In the report '*Dopning i Sverige*' by the Swedish Public health Agency⁴, Mickelsson (2009) describes doping and its implications based on different research. Mickelsson explains about "wished" positive effects and negative effects of doping. The meaning of *wished positive effects* is that one side effect may be positive for one person but it may be a negative side effect for someone else (Ibid). One group of individuals would probably see aggression as a positive and wished side effect but, on the other hand, aggression may be an unwanted (negative) side effect among the esthetic group (Morberg and Hermansson, 2006). Skårberg (2009) made another qualitative study in Örebro with the aim to explore and describe total drug use among AAS users and the reasons for using drugs. Skårberg (2009) indicates there is more research on the

⁴ The Swedish Public Health Agency have done two reports; '*Dopning i Sverige*' (2009); and '*Dopning i Samhället*' (2011), written by Mickelsson. This study mostly refer to the report *Dopning i Sverige*,

physical effects than on the psychosocial effects and also there is more research on the short-term health effects than on the long-term health effects of doping (Ibid).

2.3.1 Physical effects

In Skårberg's (2009) dissertation, four different studies are presented regarding anabolic-androgenic steroid users in treatment and their social background, drug use patterns, and criminality. Skårberg (2009) describes several physical effects of doping. The first and most common effect is that the muscles get fluid-filled and become larger in a short period of time, which is often a wished effect by the doping user. When the doping regime ends, the fluid disappears and the muscle size decreases, which could become another reason to start a second doping regime. Intake of doping substances makes the muscles capable of recovering faster, thereby allowing the body to exercise more, and the muscles to recover faster from injuries. AAS give visual body changes during a short period of time, like muscle growth, strength, and increased body-weight. Other visual side effects of doping among both men and women include severe acne that especially appears on the chest and back. Certain side effects among men include hair loss and development of female breasts. Certain side effects among women include increased hair growth, usually in places where hair would not normally grow on a female, and decreased breast size. These are the most common visual body side effects, but the list can be much longer.

Skårberg (2009) also describes internal side effects of AAS use related to the organs and their function. AAS use in general, independent of gender, increases the risk for heart and vascular diseases, thrombosis and atherosclerosis, high blood pressure, heart failure and cardiomegaly etc. AAS use has a negative effect on the liver and the kidney function, and it also can have an impact on the immune-system. There is also a risk of getting different sorts of cancer. A physical internal side effect among men includes an increased sex drive that often appears in the beginning of a doping regime, but later decreases significantly or disappears. Once gone, sometimes the sex drive never comes back. In the long-term there is a risk that the testicles shrivel up and fertility may be threatened. Skårberg (2009) points out that there is no research that shows that infertility will then last forever if one becomes infertile for a period of time from doping. A physical internal side effect among women is the risk that the menstruation

cycle will become deranged and problems with the ovaries which may lead to infertility as well (Ibid).

2.3.2 Psychosocial effects

Hall and Chapman's (2005) article describes psychiatric complications resulting from the use of anabolic androgenic steroids, based on human and animal studies, and pathological psychiatric effects of supraphysiological doses of AAS. Hall and Chapman (2005) and Skårberg et al., (2008) indicate that a cycle of the three phases begins when the next regimen starts. Usually the negative effects start dominating the positive effects, although it is worth mentioning that some AAS user never experience any negative effects (Ibid). Hall and Chapman (2005) indicate that depression is the most common symptom and could also be the most severe symptom for an AAS user (Ibid). AAS impacts the psyche on different dimensions and Skårberg (2009) in his dissertation also finds depression to be a common symptom of long-term AAS use (Ibid). But both research mention an uncertainty regarding to what extent the actual use of AAS influence these symptoms. Depression usually occurs between the different doping regimens, and it often starts when a regimen ends. There are severe risks with depression both for the individual and the society. On the individual level, there are risks of that person hurting oneself and there may be a high risk for committing suicide. Depression can develop differently. For instance, it can oscillate between being very happy and to feeling the worst (i.e., manic-depression). Anxiety and panic disorders are also common symptoms among AAS users, which are linked to depression (Hall & Chapman, 2005; Skårberg, 2009). Both Moberg and Hermansson (2006) and Mickelsson (2009) explain that doping-induced depression could produce a change in personality and cause the affected person to become unknowable from which person they were before. Changes in personality characteristics include jealousy, paranoia, suspiciousness, ignorance towards family, injudiciousness etc. A depressed person may not be aware of the significant change in their own behavior, even if the external environment indicates the opposite. The risks for the society and the proximate environment are that depression can lead to a person becoming impulsive and violent, thus increasing the risk of criminal actions.

2.4 Effects connected to social problems

2.4.1 Aggression and criminality

Klötz's (2008) dissertation investigates the correlation between violence, criminality and AAS use. With help from the Swedish Police Board's register, Klötz could examine the criminal records of AAS users and then connect their criminal actions with AAS use. Klötz (2008) shows a correlation between AAS use, aggression, violence and criminality. Aggression is a normal human characteristic, it though could be expressed differently. Aggression can be expressed towards objects, and there are verbal forms of aggressiveness, and it is often triggered from provocation. Aggression is not always a bad feeling, but AAS users may be more susceptible to feelings of aggression because of reduced self-control and impulse control. Their feelings of aggression are often more intense, and their aggression can manifest itself in forms of physical violence (Ibid). Hall and Chapman (2005) also indicates that physical violence related to AAS use is often therefore not planned, since it is often an uncontrolled reaction (behaviour) and occurs spontaneously. A Swedish national study done by Grann et al., (2005) aimed to develop a clinical tool for the monitoring of risk for violence in forensic mental health clinics through a model called Structured Outcome Assessment and Community Risk (SORM). It showed that many of all the violent crimes are perpetrated by people affected by substances. Underlying causes like psychological disorders could also be contributing, thus the AAS violence may depend on different causes (Grann, et al., 2005).

In Skårberg's (2009) study, conducted at a psychiatric treatment center in Örebro, 35 of 36 AAS users in treatment had been convicted for criminal activity. It also showed that two thirds had no criminal experience before they started using AAS. It concludes that criminal activity increases in relation to the use of doping substances. The study showed also that AAS users are at high risk to be connected to other criminals who may involve them in additional criminal actions. This illuminates that AAS use could be a pathway to criminality. The criminal activity done by an AAS user is generally violent and rough (Ibid). AAS use is also a pathway to other drug use and drug abuse (Moberg & Hermansson, 2006).

2.4.2 “Body Ideal” an effect connected to social problems

In another study by Pope et al., (1999) they have measured and compared the body shape on American action toys of plastic figures made 30 to 40 years ago with those made more recently. It showed that the body shapes of plastic figures made during the later years is much more muscular compared to the body shapes of plastic figures made in earlier years. Imposition of body ideals starts early in life through childhood toys which impact an individual’s perception of the physical body. According to Pope et al., (1998) we are today more exposed to body ideals than before because of media and the social culture that establish and reinforce expectations of how bodies should appear (Ibid). If these expectations are established early in life through a child’s simple interaction with toys, then it seems unavoidable for society to become unnaturally driven to achieve the body ideal over time.

A report by the Swedish Public Health Agency Mickelsson (2009) explains that the development of different media channels in the western society has a big influence on body ideals. Through social media, advertising, and fashion magazines, different body ideals for females and males are promoted by associating these body ideals with success. It is illegal to advertise doping substances but it is legal to show more or less unnatural musculature body shapes, which are hard to achieve without taking any complementary substances (Mickelsson, 2009). These requirements from the society on having the ultimate body may affect an individual’s consumption related to the body, for instance, the use of dietary supplements, which in return may lead to greater demands in the form of doping, as discussed earlier. The gym can now be seen as place where one “invests” in one’s body and health. The gym is also a place where doping substances and other artificial methods are taking place in order to reconstruct one’s body. It is not just the media that has contributed to an increased desire for body ideals, it is also stressful lives in the western society associated with time-constraints that lead some to adopt simpler, faster and cheaper ways of pursuing the body they want, such as with the so called quick-fixes like using doping substances or dietary supplements instead of cooking a nutritious meal (Mickelsson, 2011).

A literature study by Cohane and Pope (2001) was based on 17 studies relating to male body images. Cohane and Pope point out that discussions regarding male body ideal are on the rise compared with discussions on female body images which have been ongoing

for a long time. The result of this literature study shows a positive correlation between body satisfaction and self-esteem. In an article by Labre (2002), he explains that male body ideals have become more muscular and that media and the social culture are endorsements for especially adolescents to start experimenting with their body by taking AAS and dietary supplements. Labre (2002) highlights that this behavior could lead to severe health consequences like eating-disorders for instance (Ibid).

3. Theoretical framework

This study's philosophical scientific theoretical framework emanates from social constructivism. Social constructivism views the world as it is socially constructed. Knowledge is created through social relationships and social interaction with society. Meanings of concepts are thus changeable and depend on time and contexts (Payne, 2005). Social constructivism theory is commonly used by feminist and masculinity theorists (Moberg & Hermansson, 2006). Below, Connell's masculinity theory and Giddens's self-identity theory will be presented in order to analyze and understand the study's empirical data.

3.1 Connell's masculinity theory

Since earlier research (Hoff, 2013; Skårberg, 2009; Moberg & Hermansson, 2006) and our study show that there are more men than women who use performance-enhancing substances, Connell's masculinity theory is therefore just relevant for analyzing the empirical results that concerns men and not the women.

According to Connell (1999), time and context determine how the masculine ideal is defined. Thus, every epoch has a certain masculine ideal. The masculinity ideal is changeable with time and context, meaning that the present masculinity ideal determines dominance and position and with that it also determines the women's oppression. Connell calls this relation *hegemonic masculinity*. The social structure is divided in more categories than masculinity and feminism, including, for instance, class, race, sexuality, disabilities etc. Hence, there are different masculinities that are organized in a hierarchical fashion, according to Connell. By this he means that the masculinity factor is not limited to only being a man. There are more distinctions within the male category in the social structure of today. For instance, to be a white man means one thing and to be a homosexual black man means another thing. With this said, Connell means that there are certain qualities that determine the hegemonic masculinity. Although there are very few men that meet all the requirements, all men could still benefit from the patriarchal advantage, this is called '*complicity*' according to Connell.

Connell (1999) indicates that the masculinity ideal of today is in a bit of a crisis due to the patriarchy decline. Therefore, it is necessary to reconstruct and redefine the masculinity of today. The social construction of masculinity today differs a lot compared to how it was constructed earlier: that women are, for instance, working today, and also that sexual relationships have changed. For instance, homosexuality is today more socially accepted. With this Connell means that the society of today is '*de-gendered*'. Connell indicates that re-embodiment is necessary for men in order to use, know and show the *new* masculine body that adjusts for today's men who take care of the children or work at jobs that are historically seen as typical female jobs.

According to a book by Moberg and Hermansson (2006), '*Mandom, mod och morske män,*' it is common to find within masculinity research that masculinity is something that has to be acquired, proven, and constantly confirmed. Such research suggests a societal attitude that a man has to behave as a "man" always and consistently. Connell (1999) indicates that the notion of masculinity is in a bit of crisis today, which could mean that men need new ways to demonstrate and prove their masculinity. For most of the men, their workplace and/or their role in their family are the arenas to assert their masculinity. Other arenas could be the gym, sports team, friends, gang, associations etc (Morberg & Hermansson, 2006).

Connell (1999) also discusses the link between masculinity and violence, which is a common problem within the discourse about gender, to the extent that masculinity and violence are often seen as 'synonyms'. Connell indicates that gender is socially constructed and not something you inherit. For instance, there are certain qualities that directly link to gender, and these qualities are determined by time and context.

According to earlier research, doping substances are mainly used among men, and observing the effects and risks with doping substances, it could be seen as a structural problem in the society (Skårberg 2009). Meaning that the social context may contribute to the spreading of the use of performance-enhancing substances e.g. perception of how a man should appear may result in that men use different methods in order to achieve

societies preconceptions. Connell's masculinity theory will help to understand the motivations for using performing-enhancing substances.

3.2 Giddens's self-identity theory

Giddens's (1991) book "*modernity and self-identity*" address theories about modernity, identity and the social life, in what is known as the *structuration theory*. He highlights the complexity of human self-identity in a postmodern society as well as the interaction between the individual (micro) and the society (macro). According to Giddens, we live in the Western world in a high modern society and information and knowledge steer individuals' choices in life, which make individuals reflect upon alternatives in order to find the 'right' answer. Giddens (1991) calls this the *reflexive project* and claims that reflexive thinking impacts an individual's self-identity. The high modern society differs from the traditional society, where the life situation was more constant between generations. There were fewer opportunities for individuals to make different choices in life as they were growing up. Their own identity was already determined and followed a certain order which was quite similar to the generation before. Although, in the high modern society, Giddens means that the identity process must be explored and is constructed as a part of the reflexive process through choices, where personality and social changes are connected. Individuals are generally aware of their own life situation and have the possibility to actively influence the future. Individuals have today the possibility to make life-plans, compared to the traditional society where the life cycle's expectations were already given. Therefore, lifestyle has become a central concept which is based on reflexive choices which construct a story of the self (Ibid). As individuals are continuously fed today with new knowledge of how to live, and have to make choices constantly, the loss of traditions and routines may lead to ontological insecurity according Giddens (1991). Johansson (1995) addresses Giddens's theory in his book *Rutinisering och reflexivitet* and explains that anxiety occurs when traditions cease to exist. Individual lives do therefore oscillate between security and insecurity, i.e. between routines and changes. However, Giddens indicates that human beings are still to some extent limited due to traditions.

This study emanates from social constructivism and through Giddens's (1991) self-identity theory. Accordingly, this study sees the body as something individuals construct. The body is created and constructed related to a social context. By extension, there are external factors which influence the individual's construction of a self-identity. Self-identity may thus be created through physical appearance as well through the actual activity of exercising or using performance-enhancing substances. Therefore, exercising could be seen as an element in the identity project; to exercise at the gym frequently is a way to ontological security. Giddens also mean that with the possibility of creating one's own identity, anxiety may occur. The individual learns to handle anxiety in different ways, for instance by exercising on a daily basis. Through Giddens's (1991) self-identity theory the empirical data will be interpret and analyzed in order to give meaning to the different motivations for using performance-enhancing substances.

4. Method

The aim of this study is to investigate how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances. In order to fulfill the aim a quantitative method seemed to be the most suitable approach (See and compare Frankfort-Nachmias & Nachmias, 2008). According to Skårberg et al., (2008), it is difficult to get AAS users to participate in research studies for a number of reasons, and especially because AAS use is illegal. Therefore this study acquired its data through anonymous self-completed questionnaires. Doing a qualitative study seemed to be challenging due to difficulties in finding participants (Robson, 2011).

4.1 Sample

The sample of this study is gym users both male and female; in order to find how common performance-enhancing substances is among gym users. With gym users this study means individuals who exercise at the gym and not those people who only take part in the gym's group-training classes.

4.2 Material

This study used a self-completion questionnaire (See Appendix 1) where the questions had pre-determined responses alternatives. This questionnaire has already been used in earlier research and has been approved by Karolinska Institutet⁵ in Stockholm. As this research collaborates with *100% Ren hårdträning*⁶, who expressly suggested we use this questionnaire.

4.3 Pilot study

In this case there was no reason to do a pilot study since this questionnaire has been approved by *Karolinska Institutet* in Stockholm and has been used by earlier researchers

⁵ Karolinska Institutet is a Medical University located in Stockholm.

⁶ STAD Stockholm (Stockholm Center for Psychiatric Research and Education) has produced *100% Ren hårdträning* which is a long-term developmental model for the prevention of alcohol and drug problems.

and have reached approximately eleven thousand respondents. In order to be more comfortable with the situation regarding the data collection, five pre-study questionnaires were distributed to people close to us in order to prepare us for possible questions about the questionnaire. The results from the pilot study will not be included in our study's result.

4.4 Procedure

This study was done in collaboration with the municipality Södertälje, gyms in Södertälje and STAD Stockholm (Stockholm Center for Psychiatric Research and Education). *100% Ren hårdträning* and some of the gyms asked for an overview of the use of performance-enhancing substances at gyms in Södertälje. The gyms had already approved with *100% Ren hårdträning* for us to carry out the data collection. In a meeting where all the different stakeholders involved; Gyms in Södertälje, the municipality Södertälje and STAD Stockholm (Stockholm Center for Psychiatric Research and Education), a timetable for collecting the data from the different gyms was discussed. In order to get as many respondents as possible during each occasion, the time period for data collection was vital to the number of respondents. Therefore, it was necessary to get information from the gym owners about when the gyms are well attended. The data collection at each gym took about two to three hours.

The gyms had confirmed with *100% Ren hårdträning* that they wanted to take part in their working-method and were therefore already familiar with the reasons for conducting this study. However, the person responsible for each gym was contacted by phone, so we could explain this study and the collaboration with *100% Ren hårdträning*. Afterwards, the gyms had the option to confirm if they wanted to participate or not, then a time for collecting the data was determined.

4.5 Tools of analysis

The statistical program excel was used to tabulate all data. Chi-square test were used as an analytic tool. A chi-square test is suitable when a subject is assigned to one or more categories. Example of two categories could be respondents who use dietary supplements and respondents who do not use dietary supplements. A chi-square test

were done in order to analyze categorical data: to see if there was interrelation between two variables. There were just some of the empirical data that were possible to analyze through chi-square test (Greene & D'Oliviera, 2003).

4.6 Data collection

Questionnaires were handed out at seven different gyms. The gyms had different orientations. For instance, one of the gyms has just *powerlifting* as an activity but most of the gyms that participated have both gym and group training activities. All of the gyms were either privately owned or owned by a union or the municipality. One of the gyms was situated in Nykvarn, which is neighboring municipality, but had decided to collaborate with the Södertälje municipality regarding this study. All people who were present at the gym while the data collection took place, and had been exercising at the gym or where supposed to exercise at the gym, were asked to participate in this study.

The intention was to ask people when they had just finished exercising, as the respondent probably wants to start exercising when they first arrive at the gym and will therefore most likely have more time after they have finished their workout. Also, the answers may be more trustworthy when the respondent can leave the gym directly after they have answered the questionnaire. As mentioned earlier, the respondents received information about the aim of the study, that the questionnaire is anonymous and it is their free will to participate. Together with the questionnaire, an envelope was also handed to the respondent in order to put the completed questionnaire inside it. The sealed envelope was placed by the respondents or by us in a plastic box among the other respondents' envelopes, to generate anonymity.

4.7 Validity

Validity is concerned with the accuracy and the trustworthiness of the study's measurement (Frankfort-Nachmias & Nachmias, 2008). Since the questionnaire used in this study has been approved by Karolinska Institutet in Stockholm, has been used in several earlier research projects, and has got eleven-thousand other respondents, this contribute to our study's validity. In earlier research using this questionnaire, the procedure has been quite similar to the procedure used in this study, although the procedure has continuously developed. For instance, it has been shown that respondents

are more willing to answer after they have exercised, instead of being questioned before they are supposed to exercise. By presenting the questionnaire to respondents after they have exercised, we believe we achieve a higher participation rate and more reliable answers. Hence, this study's procedure is improved thanks to earlier researchers' experiences.

4.8 Reliability

The method and procedure chosen interacts with different factors on the stability and the consistency of the research (Robson, 20011). Therefore, it is of importance to describe in detail the methodology in case this study would be re-done by someone else. This study is conducted by two authors, which increases the objectivity as well as the reliability. All people who were exercising at the gym during the period of data collection were asked to take the questionnaire. Those people who usually go to the gym but who were not present during data collection did not take the questionnaire. The possible awareness by respondents that doping is illegal may affect the sample of respondents and the trustworthiness in the answers given by the respondents. Our presence as researchers may influence the choice of respondents as well, by influencing the respondents' behavior while they are filling in the questionnaire. For instance, our choice of words while asking for the respondents' participation could produce one answer over another. The collaboration with the municipality Södertälje, the other gyms, Karolinska Institutet, and the respondents' membership of the gym may also influence both the participation rate and also their honesty in the answers. It is impossible to control whether or not the respondents give attention to the questions in the questionnaire (Robson, 2011).

The questions in the questionnaire are simply constructed and the meanings of the concepts *doping* and *dietary supplements* are explained. Which simplify the interpretation by the respondents and increase the chances that the questions are interpreted in same way. This in turn will lead to more reliable answers that will give the data a higher reliability (Trost, 2007).

4.9 Ethical considerations

This study was conducted in accordance to the Requirements of Research Ethics (Lag 2003:460 18§, Vetenskapsrådet, 2014). According to the Information requirement (*informationskravet*), information about why this study was conducted and its aim was given to the gym owners and the participants both verbally and through written language on the cover page on the questionnaire. Information given to respondents indicated that it is anonymous, it is of their own free will to participate, and it is possible for the respondent to quit participation at any time during the survey, See appendix 1. The Consent requirement (*samtyckeskravet*) was fulfilled by informing respondents that it was of their own free will to participate. The Confidentiality and the Use requirements (*konfidentialitetskravet & nyttjandekravet*) were fulfilled as the data were anonymous and would only be used as research material. By having each respondent put the answered questionnaire in an envelope, seal it, and thereafter put it in a plastic box with the other respondents' envelopes, it would be very difficult to identify one person's answer (Ibid).

5. Results and analysis

In this section, the results of the empirical data will be presented. The results will be presented mainly through text and numbers with support from figures (see Frankfort-Nachmias & Nachmias, 2008). The results was based on 246 responses which were collected at seven different gyms. The statistical program Excel was used in order to summarize the empirical result through cross tabulation and chi-square tests was used (Greene & D'Oliviera, 2003).

The results and analysis are divided into three different themes: dietary supplements, doping substances, and exercising. Within each theme the result will first be presented which will be followed by an analysis connected to earlier research and Connell's masculinity theory and Giddens's self-identity theory. The study's aim was to investigate how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances. The following were objectives of the questionnaire in order to fulfill the aim. The results will show the respondents' answers to the questions regarding the use of dietary supplements, how often the respondents use dietary supplements, the main purposes for using dietary supplements, if the respondents ever have used or use doping substances, if the respondents know anyone in their closest environment who use doping substances, if the respondents have ever been offered doping substances, and also, the main purposes for using doping substances, attitudes towards doping, and how often the respondents exercise at the gym.

5.1 Dietary supplements for gym exercisers

Totally there were 246 respondents in this study, 73 percent were men and 27 percent were women. The average age of all the respondents was 34 years.

The result showed that it was generally very common among gym users to use dietary supplements. Totally 77 percent of all respondents say that they use some sort of dietary supplement. It was more common among men (79 %) than among women (21 %) to use dietary supplements ($p < 0.05$).

Regarding the question ‘how often do you take dietary supplements’ 75 percent answered that they take it at least a couple of times every week. Of the respondents who use dietary supplements a couple of times a week or every day, 95 percent answered that they exercise three to four times a week or more. The result showed a correlation between the respondents who exercise five times a week or more and use dietary supplements ($p < 0.05$) see figure 1. It is reasonable to assume that in order to get the desired physical result, it is necessary to take dietary supplements often and exercise at least a couple of times a week. Even the respondents who do not use dietary supplements still exercise many times a week.

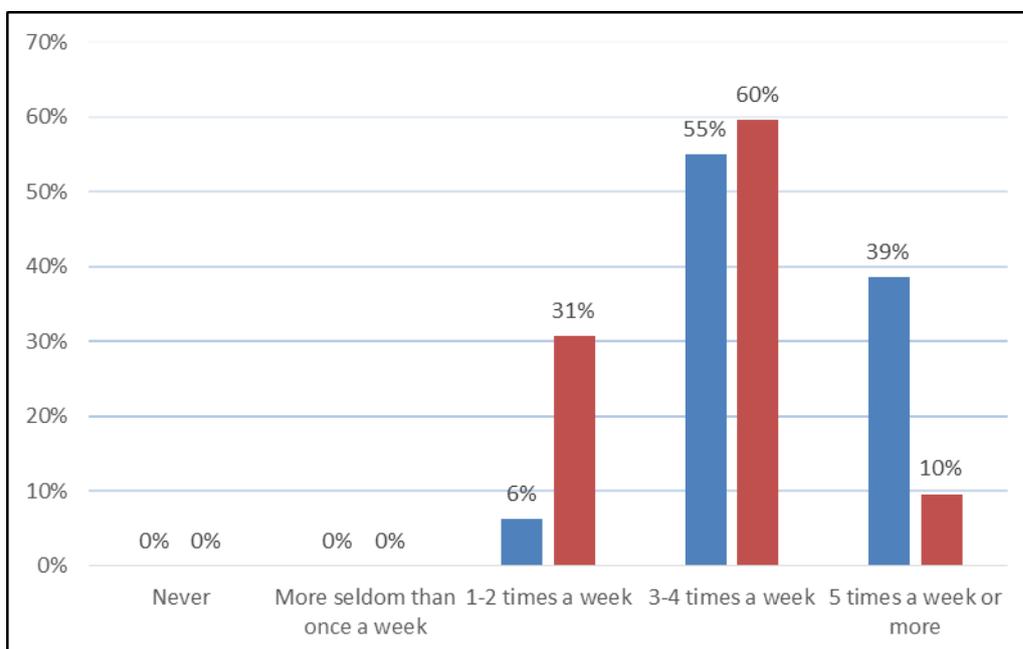


Figure 1. Percentage of respondents who use or not use dietary supplements in relation to the frequency of exercising

The average age of the respondents who use dietary supplements was 32 years compared to the average age of the respondents who do not use dietary supplement, which was 39 years. This result suggests that it is more common among younger gym users to use dietary supplements.

5.1.1 Purposes for using dietary supplements

The most common type of dietary supplements among the respondents was the dietary supplements which increase muscle mass. 25 percent of the 189 respondents who say that they use dietary supplements for the purpose of enhancing performance. 10 percent

use other types of dietary supplements, i.e. which are not identified in our study. Although vitamins and minerals were mentioned as other types of dietary supplements See Figure 2. Even though this result showed that dietary supplements that increase muscles are the most common type of dietary supplement taken by gym users, it does not show the reasons why the respondents want bigger muscles. The respondents could use several alternatives on this question. This result is still interesting as it seems that there is a greater focus nowadays on muscles than earlier (Pope et al., 1999).

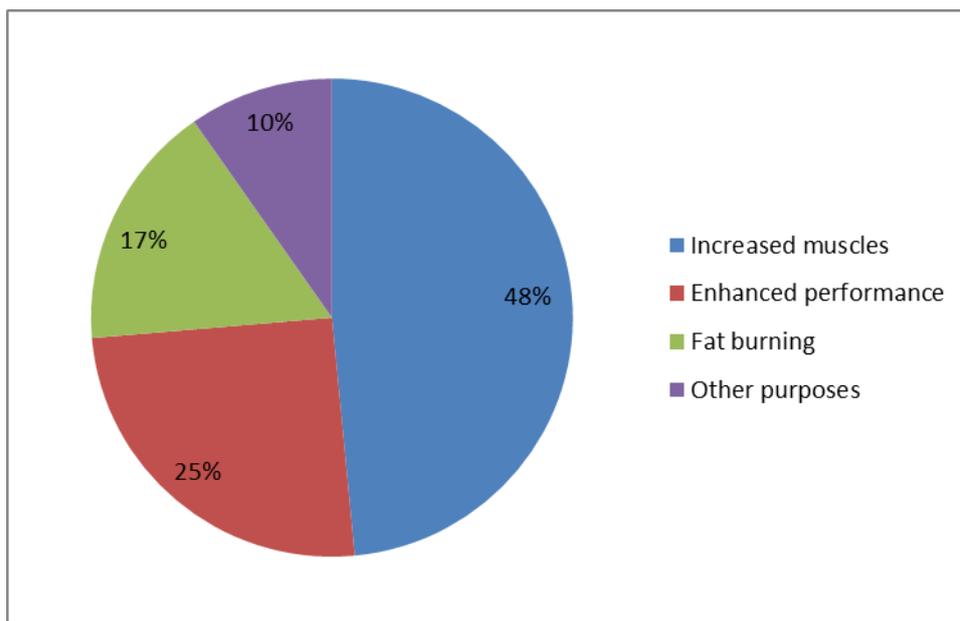


Figure 2. Percentage of different types of dietary supplements used by the respondents

The results related to dietary supplements showed that it is common to use dietary supplements among gym users, and by this one can assume it is socially acceptable as 77 percent of all respondents answered that they use dietary supplements. However, it is important to mention that everything from vitamins and minerals to protein powder (to enhance muscle mass) are defined as dietary supplements. Leifman et al., (2009) indicates in their observational study that gyms that sell dietary supplements have more gym members that use AAS compared with gyms that do not sell dietary supplements. Both the Dodge & Jaccard (2006) and Skårberg et al. (2008) studies show that there is a positive correlation between AAS use and the use of dietary supplements. Our study's result showed that all of the respondents who answered that they have used or use doping substances do also use dietary substances which thus corresponds to earlier researches' results. The selling of dietary supplements at the gym indicates that it is to

some extent socially acceptable and it normalizes the use of artificial methods. As there is a correlation between AAS use and the use of dietary supplements, it is reasonable to assume that gyms which sell dietary supplements may contribute to AAS use in the long run.

According to research by Geyer., et al (2004), 15% of 634 non-hormonal nutritional supplements, which are classified as dietary supplements, contained anabolic steroids (AS) without demonstration of it on the package in the ingredients list. Our result showed that most of the respondents use dietary supplements with the purpose to increase muscles and/or enhance performance. It would be interesting to see if it would be as common to use dietary supplements if the respondents knew there might be a risk to ingest AS.

The Swedish Public Health Agency reports by Mickelsson (2009) and Pope (2000) indicate that the media and the social culture impact on individuals' behavior related to body ideals. One study by Pope et al., (1999) shows that action toys of plastic figures have changed their shapes to more muscular body figures compared with earlier body shapes of plastic figures. This could be a sign that humans and objects influence each other. Our study's result showed that 77 percent of the respondents' use dietary supplements, this rather high number may be due to an increased focus on the body in the society. It also showed that the use of dietary supplements are more common among men than women, which is strengthened by Labre's (2002) study which explains that male body ideals have become more muscular and that media and the social culture are endorsements for especially adolescents to start experimenting with their body by taking AAS and dietary supplements. Labre (2002) indicate in his study that it is more young people who experiment with their body. Our study showed that the average age is lower among the respondents who use dietary supplements than among the respondents who do not use. So it is more common to use dietary supplements in younger years.

A study by Cohane and Pope (2001) showed a positive correlation between body satisfaction and self-esteem. Based on this research, it makes it more understandable why individuals choose to use dietary supplements or other methods that will help individuals to reach body satisfaction, and thereby gain better self-esteem. Good self-

esteem could help the individual in society in terms of employment, family and friends etc.

5.2 Doping substances for gym exercisers

There were 4 percent (11) of all respondents who answered “yes” on the question ‘have you ever used or use doping substances without a doctor’s order?’ Although two respondents claimed that they had prescriptions from a doctor for growth hormones, which could be classified as a doping substance, having prescriptions made their use legal and therefore not instances of doping (which involves illegal use). Excluding these two, the results show that it is totally nine respondents but it does not impact on the percentage. It showed that all nine respondents were men. All nine do also use dietary supplements and seven of the nine respondents use dietary supplements a couple of times a week or every day. All nine respondents answered that they exercise at the gym three to four times a week or more. It is important to mention that it was only one of the nine respondents who had used doping substances during the last twelve month, the other eight respondents must therefore have used it more than twelve month ago.

23 percent of all the 246 respondents say that they have been offered some sort of doping substances, with anabolic androgenic steroids (AAS) being the most common of the substances offered. Ten percent of all respondents say that they know someone who uses some sort of doping substance. Seven of the nine respondents who say that they have sometimes used or use doping substances also say that they know someone using AAS. On the question where the respondents have been offered to try and/or buy doping substances, 22 percent answered “at the gym” and another 22 percent answered “on the internet”. Those were the two most common places, and thus important to mention.

It was only 4 percent of all the respondents who have ever used or use doping substances without a doctor’s order. Doping is illegal and it may not be socially accepted, therefore the result may be biased. It is overall not common among gym users to claim that they have used or use doping substances. Hoff and Herngrens’s (2008) study on exercising habits and doping also showed that only 4 percent answered that

they have used or use AAS. Given that doping substances are illegal and not socially accepted, it is thus possible to assume that there may be more gym users who use doping substances than what research say.

In our study 10 percent answered that they know someone who use some sort of doping substance and 23 percent of all respondents say that they have been offered some sort of doping substance, this could suggest that there may be more gym users who use doping substances than our results show. Even though there were only 4 percent who claim that they have used or use doping substances these 4 percent were or are putting themselves at risk. In Skårberg's (2009) dissertation he describes that there are both physical and psychosocial side effects of AAS use. For instance aggression, depression, and violence are common side effects which could damage the individual's health and life situation. The side effects do not only affect the individual who use AAS, they allusively affect family and friends and they also impact on society as a whole. According to Skårberg (2009) there is more research on short-term health effects than on the long-term health effects of doping use. This result showed that it was just one of the nine respondents who used doping substances within the last twelve month. This means that eight respondents used doping substances earlier in life. Because there is a lack of research on the long-term health effects of doping use, these eight respondents are still interesting.

Dodge and Jaccard (2006) showed in their study that it is more likely to start using AS if one already uses dietary supplements. All of the respondents who answered that they have ever used or use doping substances also use dietary supplements, which corresponds with Dodge and Jaccard result. Although our results could not show that use of dietary supplements leads to anabolic steroids (AS) use. Klötz's (2008) study shows, beyond that doping substance are illegal per se, a correlation between AAS use and other criminal activities. It is likely for one to start using other types of illegal drugs in order to enhance the effects of AAS or reduce the abstinence. As aggression is a common side effect of doping use, Grann et al. (2005) show that many of all violent crimes are perpetrated by people affected by substances. Thus the 4 percent who have sometime used doping substances could have been or may be a risk for other people and the society as a whole.

5.2.1 Purposes for using doping substances

Most of the respondents who answered that they have used or used doping substances indicated more than one purpose to the question ‘Why have you used/use doping substances?’ The two most common purposes for using doping were to increase physical appearance (33 %) and to improve the recovery time for the muscles (33 %). The second most common purpose for using doping was to get physically stronger (11%), to increase the physical condition (11%), and to get improved sports results (11%) This answer corresponds with Parkinson and Evan’s (2006) study that showed that nearly 4 out of 5 users take AAS for cosmetic reasons.

As mentioned previously, Pope et al., (1999) show that action toys of plastic figures have changed their shape to more muscular body figures compared with earlier body shapes of plastic figures. Given that one of the most common reasons to use doping substances is to increase physical appearance, one could therefore say that from their point of view a muscular body is a nice body. According to Giddens’s (1991) self-identity theory, individuals in our high modern society construct themselves by making reflective choices and thereby create a self-identity. Thus it is through practical action one creates one’s self-identity, and using doping substances in order to get a nicer body may indicate different characteristics (e.g. success), that the individual in the matter may seek as identity e.g. ‘I’m a successful person’. Considering that all of the respondents who answered that they have used or use doping substances were men, by Connells’s (1999) masculinity theory one can assume that these men may want to achieve a muscular body in order to demonstrate their masculinity. The gym may thus be a new area.

5.2.2 Attitudes towards doping substances

The questionnaire also involved statements regarding attitudes towards who has the responsibility for deciding whether to use doping substances. 31 percent of all respondents *totally agreed* with the statement “it is up to each individual to decide whether to use doping substances”. 32 percent of all respondents *totally disagreed* on this question. 19 percent *partly agreed*, nine percent *partly disagreed*, and nine percent have *no opinion*. However, this result showed that the respondents’ are quite clear in

their opinions regarding if you *totally agree* or *totally disagree* whether it is up to each individual to decide to use doping substances. (See Figure 3).

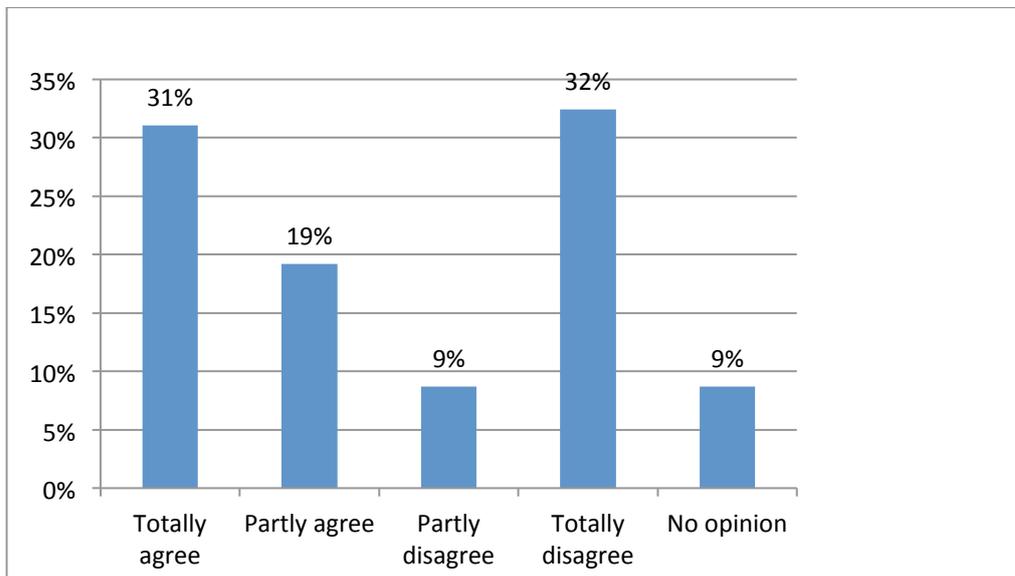


Figure 3. Percentage of respondents who agree/disagree to the statement “it is up to each individual to decide whether to use doping substances”

Concerning the gyms work against doping use, 62 percent answered they *totally agree* with the statement ‘it is important that gyms work actively against doping use’. 79 percent could imagine signing an agreement while buying gym memberships requiring suspension if you use some sort of illegal substance. 70 percent answered that they *totally agree* that gyms are obliged to suspend a gym member if he or she uses AAS or other illegal substances. 60 percent of respondents *totally agree* that it is acceptable to do unannounced doping tests among gym members. Regarding the last statement, 14 percent *totally disagree* compared to the other statement when only five or maximum six percent *totally disagree*. It is likely to assume more is required of the individuals to allow themselves to be subjected to unannounced doping tests than to sign an agreement. Regarding these statements, there is no difference in attitudes whether you use dietary supplements or not. Although on the statement ‘whether it is up to the individual to decide to use doping substances’ there is a difference. Of those who answer that they *totally agree* with this statement 34 percent use dietary supplements and 20 percent do not use dietary supplement. Of those who answered that they *totally disagree*, 29 percent use dietary supplements and 47 percent do not use dietary

supplements. Most of the respondents who answered they *partly agree*, do also use supplements ($p<0.05$).

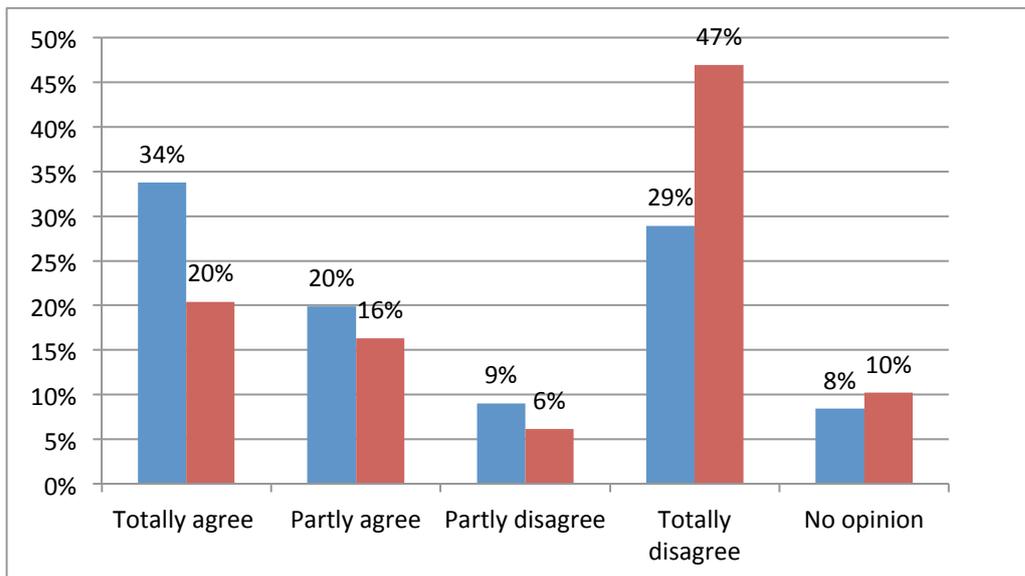


Figure 4. Percentage of respondents who use or not use dietary supplement in relation to whether the respondents agree/disagree with the statement “it is up to each individual to decide whether to use doping substances”

Regarding attitudes towards doping, 50 percent of the respondents’ answer it is totally or partly up to each individual to decide whether to use doping substances. This could seem like a large number given that the use of doping substances is an illegal activity and the side effects involve a risk for the individual as for the close social environment and the society, according to earlier research (Hall & Chapman, 2005; Skårberg, 2009). Of the respondents who use dietary supplements, most of them answered that they totally agree it is up to each individual to decide whether to use doping substances, that may give the impression that the step towards using doping substances is not so far from dietary supplements. Given that Gidden’s self-identity theory (1991) indicate that individuals construct themselves through reflexive choices, one can therefore assume that the respondents who use dietary supplements and *totally agree* with ‘it is up to each individual to decide whether to use doping substances’, construct themselves to greater extent than the respondents who do not use dietary supplements. Or using dietary supplements may be one of many different ways of how one could construct oneself.

5.3 Exercising at gym

This result showed how often the respondents exercise at the gym. The length and/or the intensiveness of the workouts were not measured. 32 percent of all the respondents exercise five times a week or more and 56 percent exercise three to four times a week. Twelve percent answered that they most commonly exercise one to two times a week. None of the respondents answered that they exercise at the gym less than once a week. (See figure 5)

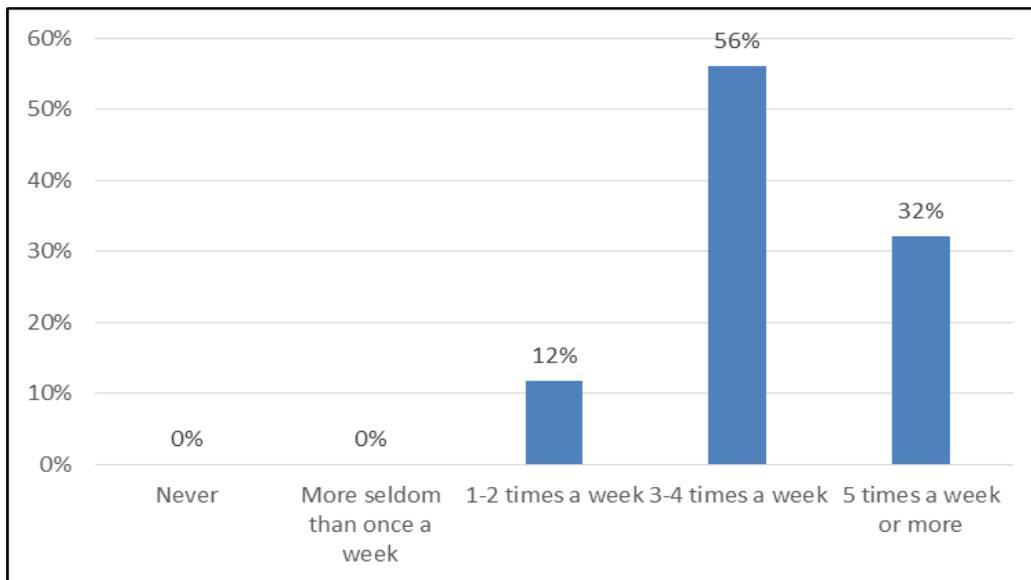


Figure 5. Percentage of respondents and frequency of exercising

Overall, the result regarding exercise frequency shows those who exercise at a gym usually exercise many times a week. As mentioned in the background, the physical body is not used to the same extent within the labor market, as it was earlier. Thus, exercising at the gym could be a way to compensate for the more sedentary work environment the Western society is experiencing today (Moberg & Hermansson, 2006). In order to get a muscular body, it may be necessary to exercise a couple of times a week to get a positive result. Giddens's (1991) indicates that the individuals construct their self-identity through reflexive choices. The respondents in this study have made the choice to work out at the gym and most of the respondents work out a couple of times a week or more. An individual who exercises at the gym as an activity is constructing a self-identity and thereby become an 'individual who exercises'.

5.4 Summary of results and analysis

The results show that it is common among gym users to use dietary supplements and it is also common to exercise at least a couple of times a week or more. Among the respondents there were generally more men than women who exercise at the gym and use dietary supplements. The women's participation in our study is only vital in order to show a difference in gender regarding the use of performance-enhancing substances. On the other hand, it is not very common to use doping substances. It was also just men who answered that they have used or use doping substances. Of the male respondents who claimed that they have used or use doping substances, the two most common purposes were to increase physical appearance and to enhance the recovery time of the muscles. The result showed that the most common type of dietary supplement is muscle enhancing substances; it does not show why the respondents want bigger muscles. This study draws on other research which suggests that artificial methods for conditioning the modern body have come from changes within the labor market, technical developments which have generated other types of jobs than earlier, and increased access to information through media which influence individuals body ideal and lifestyles. There was a quite clear difference regarding attitudes towards doping; the respondents had a clear standpoint. Either it seemed that the respondents were totally against doping substances or they thought it is totally up to each individual whether to use doping substances. This study's result is inline with earlier research.

6. Discussion

6.1 Results connected to research questions and aim

The aim of this study was to investigate how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances. A quantitative method was used and 246 questionnaires were answered. The results showed that it is very common among gym users to exercise a couple of times a week or more and it is also common to use dietary supplements, though far more common among men than women. The result showed a correlation between use of dietary supplement and the frequency of exercising. It is not common to use doping substances among gym users. The most common purpose for using a dietary supplement was to enhance muscles. The results showed two purposes that were equally common for using doping substances: physical appearance body and to improve the recovery time for the muscles. The result did not show reasons why the respondents want to have bigger muscles or physical appearance, which would have been interesting from our theoretical standpoint. Attitudes towards doping among gym users were measured as the attitudes may be linked to how common it is to use performance-enhancing substances. If performance-enhancing substances are socially accepted it is more likely to assume that individuals use it to a greater extent. For instance, the media contribute to social acceptance by promoting dietary supplements and/or pictures of muscular bodies. The results showed a quite clear difference regarding attitudes towards doping. The respondents seemed to be either totally against doping substances or they answered it is totally up to each individual whether to use doping substances or not. If the respondents knew that the risks and side effects of doping could extend beyond the individual user e.g. though being violent towards other individuals and may by contributing to criminal activity, the number of respondents that totally agree with the statement 'it is up to each individual to decide whether to use doping substance' may have been reduced, given that an individual's choice to use doping substances may affect other people as well, which may also explain why it is illegal. According to this study and earlier research by Hoff and Hergren (2008), doping substances as performance-enhancing substances are not so common among gym users. On the contrary, dietary supplements seem to be quite widespread. The results of our study suggests that working and eating natural food may apparently not

enough in our high modern society in order to be satisfied with oneself. Exercising the human body and the development of gyms may though be a healthy complement to today's more sedentary work environment, on the other hand the use of dietary supplement may not be as healthy.

6.2 Discussion related to theories and earlier research

As described in the background of this study, the physical body with its strength was a tool within the older labor market where the masculinity may have existed unconsciously. The strength of the physical body is not as important any more in most part of the working life, due to the changes within labor market arising from technological developments. Along with these changes, exercising has become a more common phenomenon among the general population and doping substances are today used not only within the elite world of sports but also by non-elite sportsmen. Along with the technical development impacting on work lives, the media have today a greater influence on individuals and the society relating to body ideals. This study investigated different purposes for using performance-enhancing substances, and it seems that the physical body is still of importance among gym users. Although the strength of the physical body is not directly important for e.g. employment anymore, the body is important in terms of physical appearance. For instance, the body and physical appearance may facilitate an individual's life by generating a greater sense of self-esteem, which contribute to that individuals often have a better social life and employment, according to Cohane and Pope (2008). The requirements on the individual may therefore be different in this high modern society. Individuals have access to information to a great extent today, which makes us more aware of our possible choices in life. All these choices could create anxiety according to Giddens (1991). To maintain a good self-esteem individuals construct themselves and their lives in a manner that reduces the conscious or unconscious anxiety.

In Skårberg's (2009) dissertation he describes that there are both physical and psychosocial side effects of AAS use. For instance aggression, depression, and violence are common side effects that could damage the individual's health and life situation, which Hall and Chapman's (2005) study also indicates. The side effects could therefore

negatively affect other people in the society but also the society as a whole. For instance, it may result in additional financial costs for the society. One question arising from this study is why some people would risk their health and life situations by using doping substances in order to get bigger muscles and thereby achieve an ideal body. Another relevant question involves the view that exercise promotes health, but how healthy is exercising if it is combined with performance-enhancing substances? Doping substances are illegal per se but according to Klötz (2008) there is also a correlation between AAS use and other criminal activities. For instance, AAS use makes it more likely to use other types of illegal drugs and also be involved in violent crimes. This is another indication that using doping substances may be a risky choice for individuals. It is reasonable to assume that due to the illegality of doping substances and the negative side effects, of those, it is more common to use dietary supplements.

6.3 Methodological analysis

In this part we will bring up some reflections regarding our chosen method. There were only certain gyms that were interested in adopting a working method towards doping use, those being affiliated with *100% Ren hårdträning*. It may be important to mention that there are other gyms in Södertälje, but not all of them were asked to participate due to different reasons. For instance, according to *100% Ren hårdträning*, there was a lack of contact details and information about all existing gyms in Södertälje. Consequently, only the bigger and better known gyms were asked to participate. If the sample of gyms had been larger and included more gyms, the result of this study would have had higher validity. Regarding the questionnaire used in this study, there was a possibility to add a few questions of our own interest. The original questionnaire contained four pages of questions, so no questions were added from our point of view to prevent the questionnaire from becoming too long and time-consuming. Over all there was a rather positive attitude among the respondents towards this study and many of them took their time to answer the questionnaire. If we would have been at each gym two times instead of one, the amount of respondents would have been larger which would make the result of this study richer.

7. Conclusion

This study showed that it is rather common among gym users to use performance-enhancing substances, even though dietary supplements are markedly more common than doping substances. This study discusses purposes for using performance-enhancing substances in relation to body ideal. Earlier research and our study show that the use of performance-enhancing substances is more common among men than women, which may be related to the changes in the society regarding labor market, technical development and body ideal.

7.1 Further research

This study has investigated how common the use of performance-enhancing substances is among gym users and to identify the different purposes of using performance-enhancing substances. This study showed that the purposes for using performance-enhancing substances were to increase physical appearance and get bigger muscles. The study did not show the reasons why it is important for an individual to have a nice body and big muscles. This study just makes speculations with help from the chosen theories regarding reasons that emanates from earlier research. Therefore, one suggestion for further research on this subject could be an interview study with gym users who use performance-enhancing substances. Another would be to examine social media's impact on the reasons for using performance-enhancing substances in order to get a nice body and big muscles. An interview study would allow us to gain a deeper and wider understanding how the physical appearance is important in this high modern society.

References

- Bahrke, M.S., & Yesalis, C.E. (2004). Abuse of anabolic androgenic steroids and related substances in sport and exercise. *Current Opinion in Pharmacology*, 4(6), 614–620
- Cohane, G.H., & Pope Jr, H. G. (2001). Body Image in Boys: A Review of the Literature. *International Journal of Eating Disorder*, 29(4), 373-379.
- Connell, R.W. (1999). *Maskuliniteter*. Daidalos AB, Göteborg.
- Dodge, T.L., & Jaccard, J.J. (2006). The effect of high school sports participation on the use of performance-enhancing substances in young adulthood. *Journal of Adolescent Health*, 39(3), 367-373.
- Dopingjouren. (2014). Retrieved February 7, 2014 from <http://www.dopingjouren.se/sv/om-dopning/dopningsfakta/>
- Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social science*. 7th Ed. New York: Worth Publisher
- Geyer, H., Parr, M. K., Mareck, U., Reinhart, U., Schrader, Y., & Schanzer, W. (2004). Analysis of non-hormonal nutritional supplements for anabolic-androgenic steroids - results of an international study. *International Journal of Sports Medicine*, 25(2), 124-129.
- Greene, J., & D'Oliveira, M. (2003). *Learning to use statistical tests in psychology*. 2th Ed. Philadelphia: Open university press.
- Giddens, A. (1991). *Modernity and Self-Identity*. Cambridge: Polity press
- Grann, M., Sturidsson, K., Haggard-Grann, U., Hiscoke, U. L., Alm, P. O., Dernevik, M., et al. (2005). Methodological development: structured outcome assessment and community risk monitoring (SORM). *International Journal of Law Psychiatry*, 28(4), 442-456.
- Hall, R. C., & Chapman, M. J. (2005). Psychiatric complications of anabolic steroid abuse. *Psychosomatics*, 46(4), 285-290.
- Hoff, D. (2013). Dopning utanför idrotten - individualisering och muskulösa skönhetsideal - En studie av dopning i grundskolan, gymnasium och på gym i Kalmars Kommun. *Scandinavian Sports Studies Forum*. (4), 1-24.

- Hoff, D., & Herngren, E. (2008). *En kartläggning av träningsvanor och doping i Kalmar 2007*. Högskolan i Kalmar
- Johansson, T. (1995). *Rutinisering och reflexivitet*. Studentlitteratur: Lund
- Klötz, F. (2008). *Anabolic Androgenic Steroids and Criminality*. Dissertation. Uppsala: Uppsala universitet
- Labre, M. P. (2002). Adolescent boys and the muscular male body ideal. *Journal of Adolescent Health*, 30(4), 233-242.
- Leifman, H., Sjöblom, E., Rehnman, C., & Holgersson, S. (2009). *Uppskattad användning av anabola androgena steroider bland tränande på gym - En observationsstudie genomförd på träningsanläggningar i Stockholms län*. Retrieved Mars 25, 2014 from http://prodis.se/sites/default/files/images/Rapport39obsstud_0.pdf
- Mickelsson, K. (2009). *Dopningen i Sverige – en inventering av utbredning, konsekvenser och åtgärder*. (Report). <http://www.folkhalsomyndigheten.se/pagefiles/12342/R2009-15-Dopningen-i-Sverige.pdf>
- Mickelsson, K. (2011). *Dopning i samhället – Vad? Hur? Vem? Varför?* (Report). <http://folkhalsomyndigheten.se/pagefiles/12667/Dopning-i-samh%C3%A4llet.pdf.pdf>
- Moberg, T., & Hermansson, G. (2006). *Mandom, mod och morske män: anabola androgena steroider: medicinskt, rättsligt och socialt*. Göteborg: Mediahuset.
- Olivardia, R., Gruber, A., & Borowiecki, J. (1999) Evolving Ideals of Male Body Image as Seen Through Action Toys. *International Journal of Eating Disorders*. 26(1) 65-72.
- Parkinson, A.B., & Evan, M.A. (2006). Anabolic Androgenic Steroids: a survey of 500 users. *Medicine and Science in Sports and Exercise*, 38(4), 644-651.
- Payne, M. (2005). *Modern social work theory*. 3rd Ed. UK: Palgrave Macmillan

- Pope, H.G., Philips, K.A., & Olivardia, R. (2000) *The Andonis complex: the secret crisis of male body obsession*. New York: London Free Press
- Pope Jr, H. G., Olivardia, R., Gruber, A., & Borowiecki, J. (1999). Evolving Ideals of Male Body Image as Seen Through Action Toys. *International Journal of Eating Disorders*. 26(1), 65-72.
- Robson, C. (2011). *Real world research* 3rd Ed. UK: Wiley
- SFS 1991:1969. *Lagen om förbud mot vissa läkemedel*.
- Skårberg, K. (2009). *Anabolic-androgenic steroid users in treatment: social background, drug use patterns, and criminality*. (Dissertation). Örebro University.
- Skårberg, K., & Engstrom, I. (2007) Troubled social background of male anabolic-androgenic steroid abusers in treatment. *Substance Abuse Treatment, Prevention, and Policy*. (2), 20.
- Skårberg, K., Nyberg, F., & Engstrom, I. (2008). The development of multiple drug use among anabolic-androgenic steroid users: six subjective case reports. *Substance Abuse Treatment, Prevention and Policy*. (3), 24.
- Söderström, T. (1999) *Gymkulturens logik – om samverkan mellan kropp, gym och samhälle*. (Dissertation). Umeå: Umeå universitet
- Södertälje Kommun. (2014). Retrieved 20, 2014 from <http://www.sodertalje.se>
- Trost, J. (2007). *Enkätboken*. Lund: Studentlitteratur
- Vetenskapsrådet. (2014). Retrieved February 18, 2014 from <http://www.codex.vr.se/texts/HSFR.pdf>
- Wada. (2014). Retrieved February 7, 2014, from <http://www.wada-ama.org/>

Appendix 1: Questionnaire



Akademin för hälsa och arbetsliv

En enkätundersökning om träning och prestationshöjande medel

Vi är studenter på socionomutbildningen, Högskolan i Gävle, som ska genomföra en enkätundersökning om träning, kosttillskott, dopning och narkotika på träningsanläggningar i Södertälje kommun. Enkätundersökningen sker i samarbete med träningsanläggningar i Södertälje, Södertälje kommun och Stad (Stockholm förebygger alkohol och drogproblem). Enkätresultatet kommer endast att användas för forskningsändamål.

Enkäten riktar sig till gymbesökare på kommunala, privata och föreningsdrivna träningsanläggningar. Medverkan är frivillig och anonym och du kan när som helst avbryta din medverkan. När du fyllt i enkäten lägger du den i ett kuvert och förseglar sedan kuvertet. När svaren kommit in sammanställs de i form av statistiska tabeller. Inga personuppgifter kommer att insamlas och resultatrapportering kommer därför inte att ske på individbasis utan endast på gruppnivå. En enskild individs svar kommer alltså inte att kunna utläsas.

Har du frågor kring studien? Kontakta följande ansvarig för studien:

My Lilja
Lektor, Högskolan i Gävle
026-648216
Handledare för uppsatsen



Akademien för hälsa och arbetsliv

A survey of exercising and performance – enhancing substances

We are two students at the social work education program, University of Gävle, who will conduct a survey regarding exercising, dietary supplements, doping and drugs at gyms in Södertälje. The survey is conducted in cooperation with gyms in Södertälje, Södertälje municipality and STAD (Stockholm Centre for Psychiatric Research and Education). The survey's results will only be used for research purpose.

The questionnaire is aimed to gym users at training facilities (gyms) in Södertälje municipality. Participation is voluntary and anonymous, and you may at any time terminate your participation. Once you have completed the questionnaire you put it in an envelope and seal the envelope. When replies are compiled in the form of statistical tables, no personal information will be collected and the result will therefore not take place on an individual basis only at group level. An individual's response will therefore not be identified.

Do you have questions regarding the study? Please contact the following responsible for the study

My Lilja
Lektor, University of Gävle
026-648216
Supervisor of the study

Några frågor om dig själv:

1. Jag är:

- Man Kvinna

2. Vilket år är du född? År: _____

3. Bor?

- Själv Med partner Med föräldrar/vårdnadshavare Annat, ange vad: _____

4. Sysselsättning?

- Pågående gymnasieutbildning
 Pågående högskoleutbildning
 Arbetar → → Vad arbetar du med? _____
 Arbetslös
 Sjukskriven
 Pensionär
 Annat, ange vad: _____

5. Vilken högsta utbildning har du?

- Slutförd grundskoleutbildning Slutförd gymnasieutbildning Slutförd högskoleutbildning

Några frågor om din träning:

6. Hur ofta styrketränar du på gym?

- Aldrig
 Mer sällan än en gång i veckan
 1-2 gånger i veckan
 3-4 gånger i veckan
 5 gånger i veckan eller mer

7. Utöver du någon idrott/fysisk aktivitet utöver styrketräning? Här kan du sätta flera X

- Ishockey Fotboll Handboll Brottning Body building Body fitness
 Tyngdlyftning Styrkelyft Kampsport Annan idrott: _____
 Nej → gå till fråga 9

8. Hur ofta brukar du träna något annat än styrketräning?

- Aldrig
 Mer sällan än en gång i veckan
 1-2 gånger i veckan
 3-4 gånger i veckan
 5 gånger i veckan eller mer

Här kommer ett antal frågor om dopning, kosttillskott och narkotika. Frågorna rör bland annat dina egna erfarenheter. Med dopning menar vi anabola androgena steroider, tillväxthormon eller annat dopningsmedel.

9. Är det någon i din närmaste bekantskapskrets som du säkert vet använder dopningsmedel?
(Markera med ett X på varje rad)

	Ja	Nej
Anabola androgena steroider	<input type="checkbox"/>	<input type="checkbox"/>
Tillväxthormon	<input type="checkbox"/>	<input type="checkbox"/>
Annat dopningsmedel	<input type="checkbox"/>	<input type="checkbox"/>

10. Har du någon gång blivit erbjuden att prova och/eller köpa någon form av dopningsmedel?
(Markera med ett X på varje rad)

	Ja	Nej
Anabola androgena steroider	<input type="checkbox"/>	<input type="checkbox"/>
Tillväxthormon	<input type="checkbox"/>	<input type="checkbox"/>
Annat dopningsmedel	<input type="checkbox"/>	<input type="checkbox"/>

11. Om ja, på vilka ställen har du blivit erbjuden att prova och/eller köpa dopningsmedel? Här kan du sätta flera X

- | | |
|---|--|
| <input type="checkbox"/> I skolan | <input type="checkbox"/> På gatan |
| <input type="checkbox"/> På arbetsplatsen | <input type="checkbox"/> Av läkare |
| <input type="checkbox"/> På gym | <input type="checkbox"/> På Internet |
| <input type="checkbox"/> På krogen | <input type="checkbox"/> Annat ställe: _____ |

12. Har du någon gång använt anabola androgena steroider, tillväxthormon eller annat dopningsmedel utan läkares inrådan?

- Ja
 Nej → gå till fråga nr 18

13. Vad har du använt. Här kan du sätta flera X

- Anabola androgena steroider
 Tillväxthormon
 Annat, ange vad: _____

14. Hur har ditt användande sett ut?

- Jag har prövat någon eller några gånger
 Jag har "kurat" 1-3 gånger
 Jag har "kurat" fler än 3 gånger

15. På vilka ställen har du fått tag på dopningsmedel? Här kan du sätta flera X

- | | |
|---|--|
| <input type="checkbox"/> I skolan | <input type="checkbox"/> På gatan |
| <input type="checkbox"/> På arbetsplatsen | <input type="checkbox"/> Av läkare |
| <input type="checkbox"/> På gym | <input type="checkbox"/> På Internet |
| <input type="checkbox"/> På krogen | <input type="checkbox"/> Annat ställe: _____ |

16. Varför har du använt/använder du dopningsmedel? Här kan du sätta flera X

- Uppnä bättre idrottsresultat
- Få snyggare kropp
- Få större muskler
- Bli starkare
- För att orka träna mer
- Snabbare återhämtning från skador
- Annan orsak, nämligen: _____

17. Har du under de senaste 12 månaderna använt anabola androgena steroider, tillväxthormon eller annat dopningsmedel utan läkares inrådan?

- Ja → *Vad har du använt? (här kan du sätta flera X)?*
- Nej
- Annat, ange vad: _____
- Anabola androgena steroider
- Tillväxthormon

18. Har du någon gång använt kosttillskott?

- Ja
 - Nej
 - Vet ej
- Om du har svarat nej eller vet ej på fråga 18, gå direkt till fråga 22*

19. Om ja, vilket/vilka preparat? Här kan du sätta flera X

- Muskelökande kosttillskott (*ex. proteinpulver, kreatin*) Vilket/vilka preparat: _____
- Prestationshöjande kosttillskott (*ex. sportdryck, taurin*) Vilket/vilka preparat: _____
- Fettförbrännande kosttillskott (*ex. fettförbränningspiller*) Vilket/vilka preparat: _____
- Andra kosttillskott Vilket/vilka preparat: _____

20. Hur ofta använder du kosttillskott?

- Mer sällan än en gång i månaden
- En gång i månaden
- Ett par gånger i månaden
- Ett par gånger i veckan
- Varje dag

21. Var får du tag i kosttillskott? Här kan du sätta flera X

- Hälsokostaffär
- Gymmet
- Vän
- Egen import
- Internet
- Annat (Var?) _____

22. Har du någon gång i livet använt narkotika utan läkares inrådan?

- Ja
- Nej → *gå till fråga nr 26*

23. Vilket/vilka preparat har du använt. Här kan du sätta flera X

- Hasch/Marijuana
- Amfetamin
- Kokain
- Heroin
- Hallucinogener
- Ecstasy
- Benzodiazepiner
- Annat: _____

24. Har du någon gång under de senaste 12 månaderna använt narkotika utan läkares inrådan?

Ja

Nej → gå till fråga nr 26

25. Har du någon gång under de senaste 30 dagarna använt narkotika utan läkares inrådan?

Ja

Nej

26. Här nedan följer ett antal påståenden som du antingen ska instämma i eller ta avstånd ifrån.

Kryssa för det alternativ som stämmer bäst. Sätt ett X på varje rad.

	Instämmer helt	Instämmer delvis	Tar delvis avstånd	Tar helt avstånd	Ingen åsikt
Det är ok att genomföra oanmälda dopningstester av tränande på gym.					
Det är rätt att stänga av tränande som använder anabola steroider eller andra otillåtna preparat.					
Jag kan tänka mig att skriva på ett avtal då jag köper träningskort om att jag kan bli avstängd från gymmet om jag tar otillåtna preparat.					
Det är viktigt att gymmet som jag tränar på arbetar aktivt för att motverka dopning.					
Det är upp till var och en att bestämma om man vill använda dopningspreparat.					

27. Har det gym som du huvudsakligen tränar på en policy mot dopning?

Ja → Hur har du fått information om policyn?

Nej

Vet ej

Skriftligt vid köp av träningskort

Muntligt vid köp av träningskort

Genom att den finns uppsatt i gymmet

Annat