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**ATHLETES` HEALTH CARE SERVICES IN THE FINNISH SPORTS
ACADEMIES**

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ABSTRACT

In today's top-level sport environment, requirements to achieve success are demanding and athletic competition has totalized into a competition between sport systems. In order to keep up in this race, sport in Finland has recently been under intense organizational construction and development. As one of the three strategic components of the Finnish elite sport system, Sports Academy Program serves aspiring young athletes to combine studies with sport, and offers diverse services to support their careers, including athletes' health care services.

Illnesses and injuries significantly lower the performance capacity of athletes, and constitute risk for their careers. As sport has become one of the biggest businesses in the world, the importance of health in contemporary high-level sports has also grown. Athletes' health care has received a significant meaning in the sport systems, and its proper organization can contribute to sporting success. Therefore it is timely to pay attention to the way athletes' health care services are organized within the Finnish elite sport system.

This study examines the current state of the athletes' health care services offered by the Finnish Sports Academies, as well as the organizational structures of these services in different Sports Academies. Also, it aims to provide an answer about how the Sports Academy health care services should be developed in the future to better support the athletes. The data combines quantitative material from an online-based Academy athlete questionnaire with qualitative data from semi-structured expert interviews in three selected Sports Academies.

The results suggest that even though there is clear need for health care services targeted for young athletes, the Sports Academy health care services are not currently used to a large extent. Also the service procedures and the level of integration with athletes' daily training do not yet meet the targets set for the Sports Academy health care services. Despite the uniform guidelines formed by the Finnish Olympic Committee, there are remarkable practical level differences in the organizational structures and service prices between different Academies. The practical level differences however seem not to have affected the perceived satisfaction with the services. Based on the findings, suggestions for development of the services were given, including equalizing the price levels between different Academies and improvements in information procedures. The results can be exploited to contribute to the development of the Sports Academy Program.

Key words: athletes' health care, Finland, health care management, sports academy

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“Serious athletes come in two varieties: those who have been injured, and those who have not been injured *yet*.”

(Brown 2005)

1 INTRODUCTION

The requirements for athletic success in today's world of sport have become extremely demanding. Elite, professional sport is highly contested and the performance capacity of an athlete determines the likelihood of success in the never-ending circle of competition. The level of demands for this capacity is continuously up-grading. Heinilä (1982) calls this progress *totalization of sport*. Nowadays elite sport occurs within a complex socio-cultural context where coaches, sponsors, owners, managers and others have an interest in the pursuit of excellence, and in the success of athletes and teams. (Anderson & Jackson 2012, 239; Heinilä 1982.)

As sport has become one of the biggest businesses and commodities in the world, the importance of health in contemporary high-level sports has also grown, and the issues of pain and injury have gotten new significance in the sporting environment. Pain, injury and medical conditions cause changes in athletes' ability to practice efficiently, harm the physical development, prolong time off the field and force breaks from training and competitions. This all can also affect athletes' psychological well-being. However, in the world of totalized sport, changes in health or injury stat take on a more significant meaning. Long-term injuries or permanent conditions can cause many social and financial tribulations, as sometimes results and performances can matter financially more than they do emotionally for the participants. In the worst case health problems can force an elite-sporting participant to look for a new career. It has even been stated that in some sporting environments, bodies when in a state of injury are nothing more than "unwanted meat" (Howe 2001 as cited in Howe 2004, 55). In addition to individual athletes, sport injuries are also a risk for many other people. Athletes aiming at the top level are always surrounded by a number of stakeholders interested in their well-being and ability to perform. Families, coaches, team members as well as sponsors and fans also feel the consequences of impaired health of an athlete. (Howe 2004, 3, 55; Minigh 2007, 47-55.)

Even though athletes still compete against each other, success in top-level sport seems to be increasingly dependable on the background forces (Anderson & Jackson 2012,

239; Heinilä 1982). According to Heinilä (1982), due to the continuous up-grading of demands in international sport, athletic competition has changed into a *competition between systems*. This means that, in order to succeed, sport systems try to cover all kinds of resources affecting the productive capacity of themselves, as the more total use of relevant resources seems to provide greater probability of success (Heinilä 1982). In this competition athletes' health care is not dismissed. In the system it can be seen as an important component of productivity, because it contributes directly to individual athletes' performance capacity. Therefore from the point of view of the system, the way athletes' health care is organized and managed becomes one of the crucial determining factors of success, and more attention and resources will be targeted to its development. This idea is supported by Waddington (1996, 180) who stated that one consequence of social developments in the sports realm has been that the top-class athletes have become more and more dependent on increasingly sophisticated systems of medical support in their efforts to become better performers.

Multiple factors ensuing from the evolution of the top sport environment generate pressures on athletes' overall health. Therefore special health care services tailored for aspiring athletes seem to become an increasingly more vital component of elite sport systems. This has opened an interesting new area of research worldwide, which now appears to be particularly timely in Finland where the elite level sport has been in organizational transition over the last few years. In 2008, following the waned sporting success in the international top-level, the Ministry of Education and Culture with the Finnish sport movement launched a program to reform the strategic principles for the top-level sport and to modify the structures of the athlete's path, with the aim of better international sporting achievements. As a result three strategic programs were created to cover Finnish athletes' needs for support in their path from childhood to the top. One of them is called the Sports Academy program, through which services to support young athletes' health are provided.

In Finland there are 21 local or sub-regional co-operation networks called the Sports Academies. Their main function is to connect educational institutions, sports organizations and other partners with the goal of helping athletes to successfully combine studying and career in sports. Their services include educational guidance to support the dual career, professional level coaching as well as health care services. In

the modification of the Finnish top-level sport system the Sports Academies received a remarkable role. Well-functioning Academy activities are seen to guarantee the appropriate environment for the aspiring young athletes to practice and to develop their careers, and to form a solid base for the whole Finnish elite sport. Recently the importance of athletes' health care services has also been recognized in the Sports Academy settings, and concrete targets for them have been set in the new Guidelines for Sports Academy Activities (Suomen Olympiakomitea 2013a). The aim is to develop the health care services to better meet the needs of the athletes and to unify the procedures within which the services are organized in single Academies.

To evaluate how the goals set for the Sports Academy program are achieved, regular evaluations are needed. After the modification the evaluation is even more important as it serves also the future development of the Sports Academies and the whole national elite sport system. In 2008, Gröhn and Riihivuori examined the Sports Academy services in their master's thesis. The study revealed that the Sports Academy athletes experienced the health care services as the most important services of the Academies. The majority of the athletes also considered the physiotherapy, the medical and the massage services at least "important." (Gröhn & Riihivuori 2008, 83, 98.)

Authors in the field of sports medicine have emphasized the significance of well-functioning health care service structures for managing athletic health in the best possible way. Functional health care services are believed to have an effect on athletic performance. Therefore the optimization of the structures of medical and coaching teams managing the elite athletes is encouraged to be made a strategic priority for all clubs and sporting organizations (Dijkstra, Pollock, Chakraverty & Alonso 2014). Despite the academic and societal interest towards the topic, health care services offered by the Finnish Sports Academies have not yet been under closer examination. Health care services are organized in different ways in different Academies, which leaves space for unalike systems and even unequal support for athlete, depending on their place of residence. To help the Sports Academies to function as their best and to serve the athletes the best way possible, it is important to explore the Sports Academy health care services in a practical level. This master's thesis aims to respond to this demand by taking a closer look to the athletes' health care services provided by the Finnish Sports Academies. The study is a part of the national Sports Academy evaluation conducted by

the Finnish Research Center for Olympic Sports KIHU, and aims to contribute to the development of the Finnish Sports Academies. The study seeks to create an overall picture about the current situation of the athletes' health care services in the Finnish Sports Academies by bringing together the perspectives of their organizers (Academies) and users (athletes), and to reveal targets of development.

2 SPORTS ACADEMIES AS A PART OF THE FINNISH ELITE SPORT SYSTEM

This chapter explains the concept of *Sports Academy* in the Finnish context. First, it sheds light on the development of Finnish elite sport system and its recent re-organization. Secondly, it introduces the Sports Academy services and their place in the new elite sport model.

2.1 Development of Finnish elite sport

Finland is, at least in the eyes of the Finns, known as a sporting nation and to some extent the national identity has been built on the international sporting success. In the early years of 1900's a newly-independent country was *run to the world map* and since that sport has been very important factor for the Finnish self-esteem. (Kokkonen 2008) For decades Finland enjoyed success in the international top-level in many different sports. Then, when coming to the 2000's, the success seemed to wither. (Lämsä & Vuolle 2000.) Finland lost its fame. The sports movement, the media and the audience began to look for the causes for this deterioration. The elite sport funding models, the training conditions for the top-level athletes and the whole national sport system received their share of the public criticism.

The waned success of the Finnish top-level sport led to the modification process with the aim of developing the quality throughout the whole field of action and as a result, to gain better sporting achievements. The development started in 2008 when the Ministry of Education and Culture, with the demand of the Finnish sports movement, set up a task force to reform the strategic principles for the top-level sport with the goal-orientation of international success. In 2010, following the initiation of the group, the Finnish Olympic Committee launched a Ministry-funded project *Huippu-urheilun muutos* (reformation of top-level sport) to lead the transition in practice. (Suomen Olympiakomitea 2012; Suomen Olympiakomitea 2013b.) After two years of working, the project culminated with publication of the report describing the common vision, the

operational model, the structure and the strategic programs to develop the Finnish elite sport. A brave vision was set:

“To become the best Nordic country by 2020 by passion, co-operation and the management of the athlete’s path”

The reformed system is built on an approach called *athlete at the center*, which is a way of thinking emphasizing the actions on the way of the *athlete's path*, an individual athlete's journey from childhood to the top level. In the new approach the athlete's path is divided into three phases: the childhood phase, the choice phase and the top phase. To cover athletes' needs for support in their way through all of these phases, three strategic programs were created. (Suomen Olympiakomitea 2012.)

2.1.1 Strategic elite sport programs

The Finnish Olympic Committee leads and develops the internationally success-oriented Finnish top-level sport. Since 2013 High Performance Unit (HPU), as a core organ of the Committee, manages and coordinates the whole network of the Finnish elite sport related activities (figure 1). After the reformation of the Finnish elite sport system, HPU operates through three strategic programs: Research and Development Programme, Peak-Phase Program and Sports Academy Program. The resources to support athletes', coaches' and other network operator's everyday life are also allocated through these programs. (Suomen Olympiakomitea 2012.) This study concentrates on the Sports Academy Program.

In short, Research and Development Program responds to the research and the development of the top-level sport, and to the implementation and development of the coaching knowledge. Its aims are to provide the best and latest information, expertise and support for the elite sport field, to reinforce the Finnish coaching knowledge, to develop the education of the coaches and to build the network of top-level sport actors to increase their cooperation, expertise and understanding of the sport. Peak-Phase Program responds, along with the sports federations, to the sporting success in the top-level, and to the development of the actions of the aspiring athletes and teams with the goal of international success. Its aims are to provide possibilities to success in the

international level, to support and to help athletes and coaches with developing high-step solutions and to create and to share top phase coaching information in the vanguard of international development (Suomen Olympiakomitea 2012.)

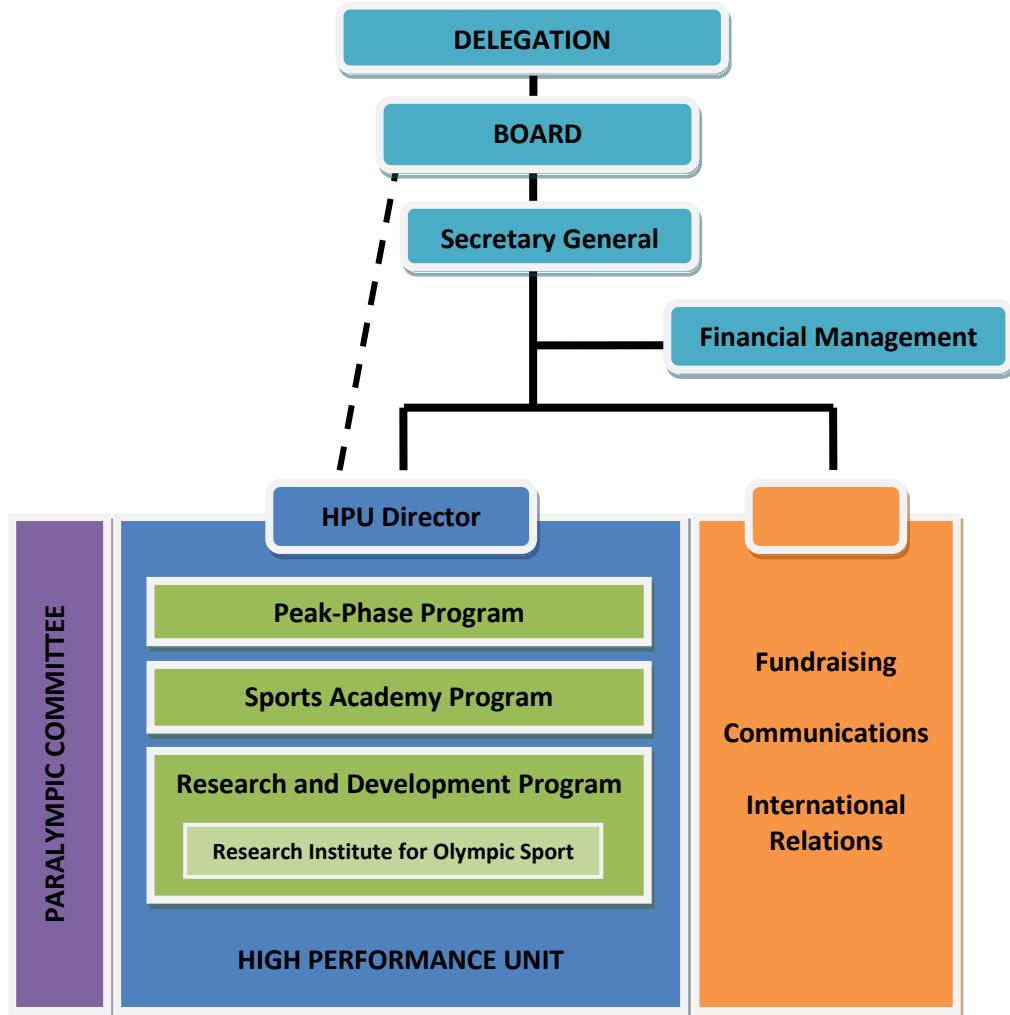


FIGURE 1. Organization chart of Finnish Olympic Committee (modified and translated from Suomen Olympiakomitea 12, 15)

2.1.2 Sports Academy Program

The Sports Academy Program is responsible for the management of the Sports Academy network covering the entire athlete's path. Its aims are to flexibly combine training with schooling and studying from the basic education level to the higher education, increase the full-time coaching in all the stages of the athlete's path, improve quality and availability of the training conditions, collect, develop and distribute

expertise in training and in supportive services, enhance the sports club activities and the wide range of cooperation, and ensure functional solutions for professional careers after sport careers. (Suomen Olympiakomitea 2012, 19-21.)

Guidelines for the Sports Academy activities (Suomen Olympiakomitea 2013a.) have been formed, as a part of the reformation process of Finnish elite sport system, to guide the Sports Academy activities to a common direction. The guidelines define the objectives and implementation for the different areas of the Sports Academy functions. The Sports Academy Program's vision is the following:

"Sports Academies are sub-regional solution for the basic level support in the athlete's path, and form the base for the Finnish elite sports network."

Concurrently with the launching of the strategic programs, funding proposals for each program were introduced. In 2012 the Finnish Sports Academies received 1, 2 M€. The proposal suggested that by 2018 the target for Sports Academy funding is 8 M€, mainly of increasing the amount of local level coaches and their expertise, the coordination and the supportive expert services. (Suomen Olympiakomitea 2012, 38.) However, by 2015 these numbers have not been met.

2.2 Finnish Sports Academies

In Finland, Sports Academies consist of local or sub-regional co-operation networks of educational institutions, sports organizations, local communities, various professional service providers and other co-operating partners with the goal of helping athletes to successfully combine studying and career in sports. Sports Academy activities are based on the coordination and development of the existing structures. Academies' main intention is to support young aspiring athletes by offering them professional coaching, study guidance and other supportive services. Main focus areas are study services, coaching services and expert services meaning health care, sport psychology and nutrition guidance services. (Suomen Olympiakomitea 2013a.)

Finnish Sports Academy activities originate from the need to combine sport and studying in the second and the higher education level. Combining schooling in secondary schools, as well as pilot experiments in primary schools, came along on next. Developing cooperation between the athlete's families, municipalities, cities and the network of experts has been involved from the beginning. The new Sports Academy program aims to look at the whole athlete's path from the perspective of the athlete, which, in addition to the actors mentioned above, increases the role of local club actors, employers, municipality networks and national network of experts. (Suomen Olympiakomitea 2013a.)

TABLE 1. Brief history of the Finnish Sports Academies (translated from Suomen Olympiakomitea 2013a, 22)

Year	Action
1986	Trial for sports-oriented educational institution system (6 high schools, 4 vocational schools)
1994	System gets formal, specific task (12 high schools)
2001	Vocational schools receive official, special mission of sports as part of the system (10 vocational schools)
2001	First Sports Academy begins its operations in Oulu
2007	Olympic Committee takes responsibility for coordination of the Sports Academies
2008	Sports Academy audit: 10 Sports Academies get a status of top-level sport Sports Academy
2010-2012	Reformation of the Finnish top-level sport and its strategic programs (<i>Huippuurheilun muutos</i>)
2010-2013	National development program of the Sports Academies
2013	High Performance Unit starts operating as part of the renewed Olympic Committee
2013	Sports academy re-audit

In Finland there are 21 regional or local Sports Academies (in 2015) serving more than 11.000 athletes. The Academies operate in the basic, the second and the higher education level and each Academy have their own local and regional networks.

Activities are coordinated nationwide by the Finnish Olympic Committee. Management of the Academies is implemented locally in different ways, but all models have to follow the Sports Academy Program guidelines. Each Sports Academy has a paid coordinator or executive director, who is responsible for the operational management of the Academy. Employees' position includes e.g. coordinative tasks with athletes, educational institutions, training conditions and expert service providers, and administrative tasks such as information, marketing and financial management. (Suomen Olympiakomitea 2013a.)

Sports Academy health care services

Services to support athlete's well-being are, in the context of the Finnish Sports Academies, part of the service supply called the expert services (*asiantuntijapalvelut*). For clarity, all services aiming to support the physical and psychological health of an athlete are called health care services in this paper. Sports Academy health care services can include medical care, physiotherapy, massage as well as sport psychology services and nutritional guidance. Services are organized in different ways in different Academies, and even though the Academies follow the common instructions of the Olympic Committee, the service supplies may vary a lot.

As the statement below shows, the importance of the health care services is recognized in the Guidelines for the Sport Academy Activities. Sports Academy program aims to develop the services in the near future. Concrete targets for the services have also been set (table 2).

"In addition to training, injury and disease prevention and treatment are essential for the development of athletes. Prevention measures should be a fixed part of the daily coaching process. Health care and athletes' psychological well-being are important items of development. Sports Academies have substantial opportunity to build a national network of experts for all the athletes on the athlete's path."

(translated from Suomen Olympiakomitea 2013a, 20)

TABLE 2. Targets for Sports Academy health care services (translated from Suomen Olympiakomitea 2013a, 20)

Nro	Target
1.	Basic health care and specialized health care services will be created for the Sports Academies in accordance with their statuses
2.	Nationally structured basic health checks and muscle balance tests will be implemented annually for all the Sports Academy athletes
3.	A system of personal doctors and physiotherapists will be created for the Sports Academy athletes
4.	Preventive and rehabilitative physical therapy will be integrated into the daily coaching
5.	Sports psychology as part of daily coaching will be developed in all states of the athlete's path
6.	Dietitian's consultation will be made available in all Sports Academies
7.	Basic nutritional checks will be conducted regularly for all the Sports Academy athletes

3 ATHLETES' HEALTH CARE

This chapter briefly outlines the theoretical framework this study takes place in. First, it sheds light to the basic development lines of sport medicine and therapy, and how the social changes as well as the totalization of competition in sport have transformed the way of nurturing athletic health. Then, it opens the concept of athletes' health care and shows what kind of special considerations might be needed to take into account when dealing with the health care of this client group. Lastly, it represents models recently created for the management of athletes' health care, and demonstrates how they can be applied in the context of the Finnish Sports Academies

3.1 Medicalization of sport

Sport dates back to the earliest written records of man's history, and so does the knowledge of athletic injuries and their care. Man's desire for sports and competitions has persisted throughout time, as has the interest towards human anatomy, physiology and medicine. Knowledge and ability to prevent, to diagnose and to treat athletic injuries and illnesses have progressed remarkably throughout the ages. (Zachazewski, Boland & Phillips 2012, 9-14.) In addition, changes in societies have affected the way medicine has become involved into different areas of life, and the process of medicalization has also encompassed sport in a specific manner.

It is likely that the first documented physicians in ancient Greece and Rome treated primarily injured soldiers. As the athletic contests were a popular way of everyday life, it can be assumed that experienced physicians were also available to treat the athletes participating in boxing, wrestling and other sport activities and competitions such as the ancient Olympic Games, where some athletic injuries must have occurred. The field of sports medicine is considered to have begun truly in the 5th century BC when trainers have been documented to use combinations of therapeutic exercises and treatment protocols with athletic conditioning. Their activities were somewhat similar to physical and massage therapy and nutrition science. However, medical specialists did not participate in the care and training of athletes except to treat injuries. This changed in

about the 2nd century AD in the Roman Empire, when the first team physician, "The Father of Modern Sports Medicine" Claudius Galen, was appointed to treat the gladiators. His studies in exercise physiology, anatomy, training effects and nutrition became the principles of medical knowledge in the Western world. After Galen, the progression of knowledge in medicine, medical gymnastics and rehabilitation continued periodically in the Islamic culture and Italy. In the early 17th century, a physician of Verona encouraged, in his publication, physicians interested in sports to become more involved in the athletic contests, and to recognize the importance of understanding of the demands of sport in order to provide effective care for athletes. This statement remains valid today. (Minigh 2007, 19; Zachazewski et al 2012 9-14.)

The term *sports medicine* has its origin in Europe at the beginning of the 20th century, and its first use appears to have been in February 1928 during a meeting of physicians attending the Second Winter Olympic games at St. Moritz, Switzerland. At this meeting an association which is nowadays called Fédération Internationale de Médecine Sportive was also founded. During the last decades, most countries have their own national organizations concerned with sports medicine, and the sports medicine professionals are a well-established part of the sporting scene. (Waddington 1996.)

In the period since the early 1950's, the development of sports medicine has been particularly rapid. Now, sports medicine is a recognized special field of modern medicine that deals with injuries or illnesses resulting from participation in sports and athletic activities. It is concerned with proper functioning of the human body and with the prevention and treatment of athletic injuries. Modern sports medicine aims to improve the treatment of injury, and to increase performance by using new technologies. The treatment techniques that form practical sports medicine are a result of the scientific advances of theoretical sports science and medicine. They can be divided into two forms: curative and preventive. (Howe 2004, 21.) Sports medicine, however, has a much wider scope than just the management of sporting injuries, and should be defined as *medicine of exercise* or *total medical care of the exercising individual*. (Brukner & Khan 2002, 3; Minigh 2007, 3; Waddington 1996.)

The development of sports medicine has been examined also from sociological perspective, and in this context the process has been called *medicalization of sport*.

Based on the work of Zola (1972), medicalization is described as a process through which areas of everyday life—such as ageing and pregnancy—have come under the purview of medical authority (Furedi 2008). In modern industrial societies a growing range of normal experiences have become redefined as health issues that require medical intervention. Waddington (1996) and Howe (2004) have illustrated how this *medicalization of life* has been expanded to sports world. They suggest that sports medicine has not been immune to the social influences, and that its development has been associated with processes of social change both within the world of medicine and the world of sport. The medicalization of life with the increased desire for winning, the pressures formed by the commercialized world of sport as well as the political aspects of international competition have been central societal elements in the development process of sports medicine. (Waddington 1996, 176-185; Howe 2004, 11-25.) It can be argued that due to these changes, athletes have become one more group to add to the list of *normal* people who are considered to require medical supervision: not because they necessarily have any medical conditions but simply because they are athletes. (Waddington 1996, 179-180.)

As a consequence of the widespread ideology justifying medical intervention in sports, athletes aiming high have become increasingly dependent on sophisticated health care systems to support their efforts (Waddington 1996, 180). The desire for success has also affected the management's commitment to getting the medical staff that can provide the services athletes need (Howe 2004, 184-185). History shows that the care provided to athletes has been rendered by a multitude of professions. The situation today in the field of sports medicine involves a comprehensive team of healthcare professionals with versatile educational backgrounds. (Minigh 2007, 4-9; Zachazewski et al 2012, 9-17.) There has been the shift away from volunteers who were minimally trained as treatment staff, towards the enlisting of the services of a sports medicine clinic staffed by qualified practitioners (Howe 2004, 184-185; Minigh 2007, 61; Waddington 1996, 180).

3.2 Athletes' health care services

Brukner and Khan (2002) described sports medicine as *total medical care of the exercising individual*. However, this definition does not perfectly describe the needs of a

goal-oriented athlete for his medical care which – due to the physically more eroding nature of the activities – are likely to be more demanding than those of a regular exercising individual. Instead of using *total medical care of an athlete*, a more accurate term is needed to describe all the actions aiming to enhance and improve the overall health of a competitive athlete. In this paper the term *athletes' health care services* is used to represent activities, the objective of which is to ensure an athlete's physical and psychological well-being for him to be able to practice and compete in a way required to success in his discipline.

Health care services, as well as vocational guidance and other sport performance sciences, are part of the support services provided to athletes to contribute to athlete development, and to create the best possible chance of sporting success (Fricker 2013). Referring to the guidelines by the National Athletic Trainers' Association NATA (2007), athletes' health care should involve more than just basic emergency care during sports participation, and encompasses the provision of many other services. While emergency medical care and event coverage are critical, appropriate care also includes activities of ongoing daily health care, such as determination of athletes' readiness to participate in the activities, injury prevention, recognition, evaluation, treatment and rehabilitation of athletic injuries and illnesses, psychosocial intervention and nutritional aspects. (The National Athletic Trainers' Association 2007). Many disciplines in the area of sports medicine and health care are needed to provide appropriate health care for athletes. These disciplines include at least sport and exercise medicine, physiotherapy, soft tissue therapy, nutrition and dietetics, and sport psychology.

Sports medicine practitioners consult with athletes in doctor-patient settings, and provide advices and case management for the range of illnesses and injuries that athletes encounter. Service can include musculoskeletal imaging and prescribing appropriate medicine. To avoid inadvertent doping, counseling concerning exemptions of the usage of otherwise proscribed substances is important. When needed, athletes may be referred to other specialists such as orthopedic surgeons, cardiologists and respiratory physicians. (Fricker 2013, 184)

Physiotherapists are involved in the care of athletes to advise, prescribe and monitor programmes for injury rehabilitation. Physiotherapists also have a key role in the

development and implementations of injury prevention programmes, and are often the center of the support group of the athlete. Sports physiotherapists can diagnose and manage athletes' musculoskeletal conditions. A number of modalities, such as massage, stretching, electrotherapies, resistance exercise and joint and soft tissue mobilization are used. In addition to physiotherapy, soft tissue therapies such as massage and acupuncture can be used to manage athletes' soft tissue conditions, e.g. muscle soreness, muscle tightness and cramps. Soft tissue therapists can diagnose and manage a range of complaints, but any concerns are suggested to be referred to medical or physiotherapy practitioners. (Fricker 2013, 185-186)

Nutritionists' role in athletes' health care is to promote healthy eating to enhance athletes' performance. Areas of counseling include the appropriate use of nutritional supplements for performance enhancement, appropriate dietary strategies for training, competing and recovery, and healthy weight management. (Fricker 2013, 187-188.) Sport psychologists in turn are used to contribute to both athletes' mental health and performance capacity. Performance enhancement includes mental routines to promote confidence, settle anxiety in competitions, control emotions and minimize fatigue. Psychologists may also be used in a case of injury, eating disorders, life stress and balance, social issues and time management. A holistic approach to the care of athletes' mental and physical well-being is increasingly important, and sport psychologists are required to co-operate closely with other care providers as well as coaches. (Fricker 2013, 191-192.)

3.3 Special considerations in athletes' health care

As Waddington (1996) showed, health care measures might have become so big part of the sporting environments partly because just being an athlete is seen to require medical interventions. This has been argued with the statements which proposed that "extreme physical fitness produce peculiar medical problems" and that "a trained athlete is different from the man in the street" (Williams 1962 as stated in Waddington 1996, 179). Regardless of the reasons behind the medicalization of sport, aspiring athletes in a modern sporting environment do form a group of clients in the health care of which some specific sociological, ethical and medical considerations might be needed to be

paid attention to. Such conflicts and dimensions that may not be faced in the care of other people, may appear when dealing with athletes' health.

The totalization process of sport, earlier defined with the writings of Heinilä (1982), can be seen to encompass also the ways athletes' health is nurtured in the contemporary sport systems. For the most part, the medical services administered to sports participants are and have been curative in nature. However, due to the significant effects of an injury on many actors in the sporting world, injury prevention has gained more ground in the field of sport sciences, and preventive medical treatment has increasingly become important. Athletes initiate the preventive actions in order to enhance their performance so that they can increase their fitness level in a competitive marketplace. Therefore it can be argued that increasing competition and totalization has initiated also the desire of the elite sporting performers to prevent injuries, and increase their level of performance. (Howe 2004, 184-185; Minigh 2007, 61).

Whilst prevention of injury is certainly desirable, the fact that athletes will be injured is part of sport participation. Also, in order to perform regularly on the sporting stages, athletes at some point might consciously risk their health (Howe 2004, 24). Brown (2005) has stated: "serious athletes come in two varieties: those who have been injured, and those who have not been injured *yet*." It has been shown that the intensity and duration of training necessary to compete at high level are likely to cause consequences— even at young age. A recent study by Maffulli, Baxter-Jones and Grieve (2015) showed that young athletes competing and succeeding at international level had significantly higher injury rates than those competing in lower levels. Konttinen et al (2011) found out in their study that slightly more than half of the 14-15-year-old competitive Finnish athletes have suffered from a sports injury. However, both studies showed that the injury rates vary a lot between different sports, and some types of sports seem to be causing more injuries than the others. This kind of information might need to be taken into account when planning appropriate health care services for athletes.

The treatment of occurred sports injuries is a practical process that is informed by the theoretical investigation of sports medicine (Howe 2004, 184). Due to the special context sport provides for health and injuries, two elements that are often contradictory are present when treating athletes. Facilitation of optimal training and competition, and

management of the athlete's long-term health are needed to be integrated into successful athletes' health care. (Dijkstra, Pollock, Chakraverty and Alonso 2014, 1.) It can be said that in sport, injury is never a purely medical question. In many cases the best medical decision would be to eliminate the cause of athlete's ailment, but this does not necessarily provide the best answer to an athlete striving for excellence. (Lurie 2006).

Lurie (2006) has proposed four ontological models that provide broader perspective on how sports injuries and their treatment can be approached from medical professionals' point of view. Firstly, the *medical model* explains the essence of sports injury simply as a condition limiting the health of a human being. In this case the treatment focuses on eliminating the limiting condition and restoring the athlete to his normal functioning. The *normative model* in turn refers to sport injuries by adding the element of rule-governed practice on the medical model approach. This means that sports injury is seen as a factor that hinders the athlete from meeting the challenge and excelling related to the rules of the game. This challenges sports medicine specialists to understand that athletes being treated are not just ordinary human beings, and that they need to be assisted to meet the challenge defined by their practice. Thirdly, the *liberal model* interprets sports injuries as factors that limit the athlete's autonomous choice to be an athlete, and prevent him from fulfilling his self-defined goals. The model highlights the respect for persons and the athlete's right to pursue his goals, and takes away the treatment professionals' right to impose the athlete. Finally, the *phenomenological model* takes into account the fact that athletes do not develop their goals in a vacuum but are influenced by certain athletic cultures and environments. This model explores the significance of sport in terms of the ways athletes experience it, and examines what it means for a patient-athlete to have his life disrupted and his self-identity affected by a sports injury. (Lurie 2006).

Following the ideas of Lurie's liberal and phenomenological models, it is clear that in athletes' health care the individual needs and goals of an athlete might sometimes matter more than purely medical aspects. Accordingly, in the context of athletes' health care, the concept *patient-centered care* becomes remarkably relevant. In mainstream health care, it refers to the delivery of health care services focusing on the needs and concerns of an individual patient (Bardes 2012), but the same concept can be applied in sports medicine as *athlete-centered care* (Courson et al 2014, 129). Athletes are very

aware of and interested in their physical condition as their bodies are their instruments, and for some, even a source of income. Athlete-centered approach is therefore very crucial to adopt for health care professionals working in athletes' health care, and athletes must be taken into the core of the medical decision-making heavily related not only to their own health but also to their career prospects and lives in general.

It has been argued that the sports medicine providers can face ethical dilemmas if an individual athlete's best medical interests conflict with the performance expectations of authority figures such as coaches and parents (Wilkerson 2012). This might be rarely the case, but as coaches are directly responsible for athletes' training, it is important to involve them in medical care of their protégés. (Brukner & Khan 2002). Moreover all other actors, whose primary focus is in the immediate and long-term health and well-being of the individual athlete, should be involved. (Courson et al 2014). This helps to avoid conflicts, and above all, to make sure the whole athletic and social environments support the preventive actions as well as the treatment processes.

3.5 Management of athletes' health care services

As shown, athletes' health care is a complex concept and requires co-operation between many different stakeholders. As the medical care of athletes have become increasingly important part of elite sport systems, much of attention should be paid also to their organization and management. Alonso et al. (2014) stated that the functions of the organizational structures of the services to support an athlete can affect sporting performance, and it is therefore suggested that optimizing the structures of medical and coaching team management should be a strategic priority for all sporting organizations. Howe (2004, 11) has mentioned that the structure and organization of medicine relating to sport can be seen to have a profound impact on the manner in which elite sporting performers are treated when they become injured.

Athletes' health care is a wide-ranging discipline. It is not possible for any one profession to develop all the skills required. (Almquist et al 2008, 416-417; Brukner & Khan 2002, 3; Gofrey 2009, 107.) Multidisciplinary teams comprising doctors, nurses, psychologists, physiotherapists and other professionals have been part of the health

service industry for many years already. This approach has still been relatively new to sport. (Reid, Steward & Thorne 2004). Even so, some authors in the field have recently brought up team-thinking in sports medicine, and they see the team approach as a vital element of optimizing athletes' care. Brukner and Khan (2002, 3) mentioned that professionals from different disciplines utilizing their specialized skills can provide the best athletic care. Almquist et al (2008, 416-417) suggested that in order to provide appropriate medical care for athletes, organizations must create athletic health care teams that function in a coherent, coordinated, and efficient manner with coaches and administrators of sponsoring organizations adhere to commonly accepted standards of good clinical practice. Also Fu, Tjoumakaris and Buoncristiani (2007) stated that building a successful sports medicine team is equally as important to the success of an athletic organization as fielding talented athletes. Gofrey (2009, 107) remarked the practical aspects of the health care organization by noting that the team approach can be implemented either as a "one-stop shop" in the setting of a multidisciplinary sports clinic, or by cross-referral collaboration of individual practitioners. It is noticeable that in the sport context research considering these kinds of different organizational procedures or their effectiveness is still nearly non-existent.

Sauers and Snyder (2011) have noted that the spirit of team approach to health care is especially embodied in sports medicine and sport rehabilitation. Traditionally athletes' health care have been framed as the athletic trainer, physical therapist, and physician working together to improve the health of the athlete. (Sauers & Snyder 2011.) But as mentioned earlier, involving coaches, family members and the whole athletic environment to athletes' health is crucially important. At the same time increasingly more professional groups become integrated into the support teams around an individual athlete, but the care should still remain athlete-centered. Expansion and sophistication of these high performance teams sets challenges to their management.

Dijkstra et al (2014) stated that for many athletes, coaches, clinicians and managers, the integrated and performance-focused approach to athlete health and coaching is still a difficult concept. As athletes cannot take care of the whole set of stakeholders on their own, they need the support of a well-organized and integrated health and coaching team working in harmony towards common goals. Having a critical look at the organization of medical support services to athletes, and the best way to continuously manage

athletes' health is therefore important. (Dijkstra et al 2014.) However, literature and research concerning the management and structure of athletes' health care is still scarce. Some models for establishment and management of the high performance coaching teams, sport science teams and medical care teams have nevertheless been formed. The following section represents these ideas.

Theories and applications

Fu, Tjoumakaris and Buoncristiani (2007) have formed a guideline on how to assemble and administer the optimal set of health care specialists for athletes' health care. They suggest that the first task of a sport organization building a sports medicine team is to identify the objectives that the team must achieve. These objectives should be defined based on the needs of the athletes that the team serves.

In this task setting process, it is possible to exploit the guidelines (table 3) created in the United States by The National Athletic Trainers' Association (Almquist et al 2008). This *framework for appropriate medical care for the secondary school-aged athletes* provides 11 consensus points for the development of an athletic health care team for adolescents competing in school and club-level sports. It gives guidelines for assigning responsibilities to the health care team, administrators, and staff members of institutions organizing athletic programs. Even though the guidelines are designed for and serve best the organizations operating under the American school-run sport system, the list of the consensus point provides a highly useful framework for all actors with an aim of creating a well-functioning health care services for young athletes.

TABLE 3. NATA 11-point framework for appropriate medical care for the secondary school-aged athletes. (Almquist et al 2008)

Nro	Guideline statement
1.	Develop and implement a comprehensive athletic health care administrative system
2.	Determine the individual's readiness to participate through the pre-participation physical examination.
3.	Promote safe and appropriate practice, competition and treatment facilities
4.	Advise on the selection, fit, function and maintenance of athletic equipment
5.	Develop and implement a comprehensive emergency action plan
6.	Establish protocols regarding adverse environmental conditions
7.	Provide for on-site recognition, evaluation and immediate treatment of injury and illness, with appropriate referrals
8.	Facilitate rehabilitation and reconditioning
9.	Provide for psychological consultation and referral
10.	Provide scientifically sound nutritional counseling and education
11.	Develop injury and illness prevention strategies

The NATA framework can also be used to develop injury prevention strategies within sport organizations. Almquist et al (2008) applied an approach known as the Haddon matrix to create a strategy for prevention efforts to occur before the injury, during the injury and after the injury (table 4). In addition to this time axis, the matrix includes four risk factors: the host (potentially injured person), the agent (the energy and the way in which it is transferred), and the physical and social environments. A prevention program incorporates interventions that span the time axis and address the different risk factors. (Almquist et al 2008.) The matrix provides a well-designed model for injury prevention that is ready to use when establishing procedures of athletes' health care team activities. Therefore it is also useful for Finnish Sports Academies, who have set an aim for increasing injury prevention strategies.

TABLE 4. Haddon matrix applied to injury prevention strategies, based on the NATA 11-point framework (Almquist et al 2008)

Phase/Factor	Host	Agent	Physical Environment	Social Environment
Before injury	Consensus Statement 2: Determine the individual's readiness to participate through the preparticipation physical examination	Consensus Statement 4: Advise on the selection, fit, function, and maintenance of athletic equipment	Consensus Statement 3: Promote safe and appropriate practice, competition, and treatment facilities Consensus Statement 6: Establish protocols regarding environmental conditions	Consensus Statement 10: Provide scientifically sound nutritional counseling and education Consensus Statement 1: Participate in the development and implementation of a comprehensive athletic health care administrative system
Injury After injury	Protective responses Consensus Statement 8: Facilitate rehabilitation and reconditioning	Player size and speed Exposure to repeat trauma	Field condition Consensus Statement 5: Develop and implement a comprehensive emergency action plan Consensus Statement 7: Provide for on-site recognition, evaluation, and immediate treatment of injury and illness, with appropriate referrals	Rules enforcement Consensus Statement 9: Provide for psychosocial consultation and referral

According to the guidelines by Fu et al (2007), another fundamental decision that must be made in the assembly of an athletes' health care team is to identify which health care providers are essential players and which can be used more in ancillary capacity. This identification should be done carefully, as Reid, Steward & Thorne (2004) have pointed out that the size of multidisciplinary sport science teams might have an effect on its functionality and effectiveness. While smaller groups of professionals seem to have their benefits in terms of better individual commitment and interpersonal collaboration, multidisciplinary sport science teams are getting increasingly larger. They argue though, that in small groups evaluation apprehension may occur, and that they are more prone to destabilizing effect when adding new members to them. Accordingly they suggest that times of transition such as these require increased vigilance in monitoring group functioning to ensure that such changes are occurring in a considered and manageable way. (Reid, Steward & Thorne 2004.) The sets of health care providers collaborating with the Finnish Sports Academies are currently relatively small, but due to the new investments they are likely to end up under extension transition in the near future. Therefore it should be carefully considered what the optimal size of a health care teams might be, and how the expanding health care provider groups can be administered in individual Sports Academies.

To contribute to the decision-making considering the assembly of athletes' health care teams, the model of *multidisciplinary approach to sport injury rehabilitation* (figure 2) created by Clement and Arvinen-Barrow (2013) can be used. In this model, the sports

medicine team involved in the treatment of an injured athlete is divided into two teams: primary and secondary. Primary rehabilitation team consists of those sport medicine professionals who work closely with the athlete being treated, typically physiotherapist and physician. The secondary rehabilitation team then consists of a range of health professionals and significant others with whom the athlete under treatment might have varying degrees of interaction during the process. All these individuals are not necessarily directly involved in the physical treatment but they often contribute to the athletes' treatment experience. (Clement & Arvinen-Barrow 2013.) Even though this model is created for describing the specific phase of injury rehabilitation, it gives a highly applicable framework for what kind of stakeholders should ideally be involved in athletes' health care teams in general, and also describes their mutual order of importance in a simple form.

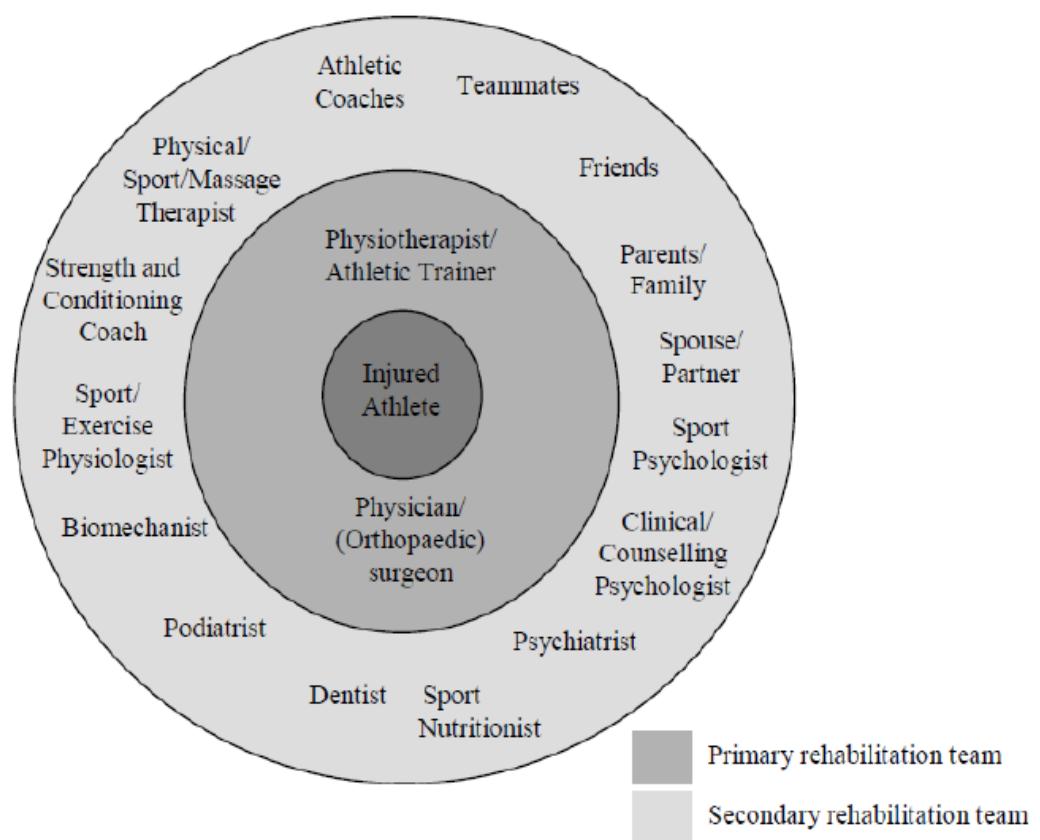


FIGURE 2. Multidiscipline sports medicine team: primary and secondary rehabilitation teams (Clement & Arvinen-Barrow 2013)

Dijkstra, Pollock, Chakraverty and Alonso (2014) have presented a more wide-ranging model describing the relations of the different actors in the whole sporting environment. The *integrated performance health and coaching model* (figure 3) illustrates the delivery of sports medicine services to elite athletes, and provides guidelines on how coaching and support teams should work together in a performance-driven sport environment. It is suggested to be applicable for clubs and sport governing bodies as a framework for the organizational structure and management of medical teams. Therefore it can also be used as a framework for Sports Academy health care services.

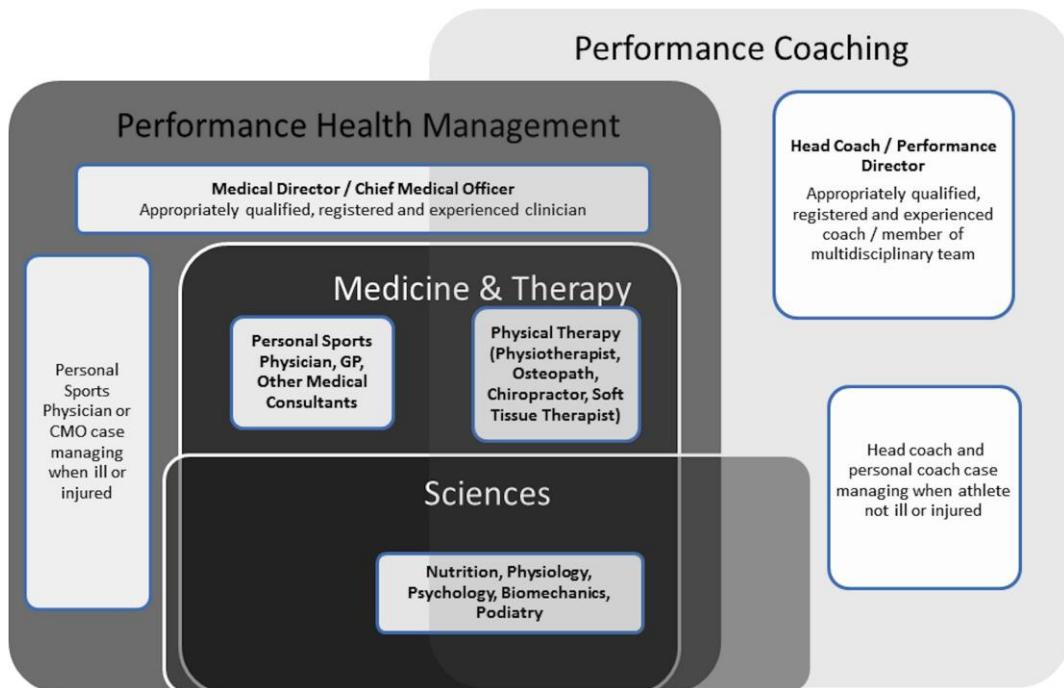


FIGURE 3. The integrated performance health management and coaching model
(Dijkstra, Pollock, Chakraverty & Alonso 2014)

In this model, all the specialties in health and coaching operate in their own "box". Athletes' health (injury, illness and prevention) is managed by specialist sports medicine physicians and coaching is managed by the head coach. Both departments are managed by the *performance director*, however depending on the structure, size and culture of the organization/club. The health and coaching departments operate in synergy and also independently with appropriate autonomy. In the model, decisions are not made in isolation and take into account the best medical evidence as well as athletes' preferences. The experienced sports physician, in close collaboration with other members of the multidisciplinary support team, is ideally positioned as *case*

manager, especially when the athlete needs to train or compete when ill or injured. (Dijkstra et al 2014.)

The model illustrated well the complexity and the overlap of different "departments" supporting athletes. It also describes somewhat truthfully the situation of the Sports Academy athletes, whose coaching and health care services are run separately, but both through the Sports Academies. The concept of performance director fits especially well to the case of the Finnish Sports Academies, where Academy workers coordinate both departments. However, when an athlete is facing an injury or illness, the model suggest that the management should be led by a doctor, in other words a member of the health care department, who might not have as wide knowledge about the athlete's training procedures and other daily life as an Academy coordinators usually have.

On the other hand it makes highly sense that when a health concern occurs, a health care professional might be the best actor to be in charge of the planning and decision-making considering the athlete's treatment process and the overall action-plan. There has been a significant debate in the medical community regarding who is the best suited to be the sports medicine director of a medical team. It has been suggested that the true *coordinator of care* for athletes is the physiotherapist (or in the US, athletic trainer) while others have argued that this individual should be a sports-medicine trained physician (Fu 2007). Rather than contribute to this debate, both views can be seen supportive to the idea of *primary medicine team* presented by Clement and Arvinen-Barrow (2013), where physician and physiotherapist together form the core circle of athletic health care.

Collins, Trower and Cruickshank (2013) have regarded the issue of the coordination with their own model (figure 4). They have introduced a concept of a *performance manager* as a coordinating and organizing actor between the performers—the athlete and the coach—and other squads involved in the performance environment, including the health care professionals. According to them, the model is appropriate for cases where the performers are geographically spread, having their own coaches, and when there are many dispersed squads involved in coaching. To a certain degree, this setting describes the current situation of the Sports Academies athletes, whose daily sport activities are often run in separate locations with their own individual coaching teams, yet they all

still somehow operate under their own Academies. Therefore the model is very applicable in this context, and again, the Academy coordinators could be seen to play the role of performance managers.

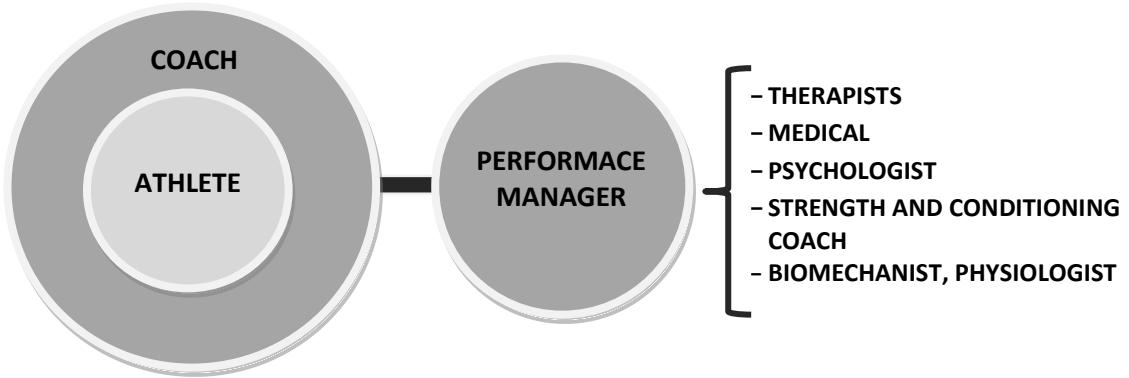


FIGURE 4. The performance manager system in distributed high performance settings, adapted from (Collins, Trower and Cruickshank 2013)

As stated earlier, many different stakeholders are nowadays involved in athletes' health care. Reid, Steward and Thorne (2004) argued that in many cases the word team cannot be even used to describe the set of the different service providers, as in the sporting domain such professional groupings are often seen merely as an incidental by-product of accessing a wide range of professional services. Nevertheless, they noted that the professional practice of the single service providers has a continuous interplay at the level of athlete management. Accordingly, they highlighted the role of communication as one of the key factors for building a functional health care team and to avoid conflicts between different health care providers. (Reid et al 2004.) Also Fu et al (2007) emphasized the importance of communication between the members of a sports medicine team as the biggest key to success.

Clement and Arvinen-Barrow (2013) have formed a *sociogram of injury rehabilitation setting* (figure 5) to demonstrate the interaction between different members involved in the rehabilitation process of an occurred sports injury, Application of the model can be expanded to illustrate also the relationships between athletes' health care team members in general, and used to understand the complexity of communication among separate health care providers.

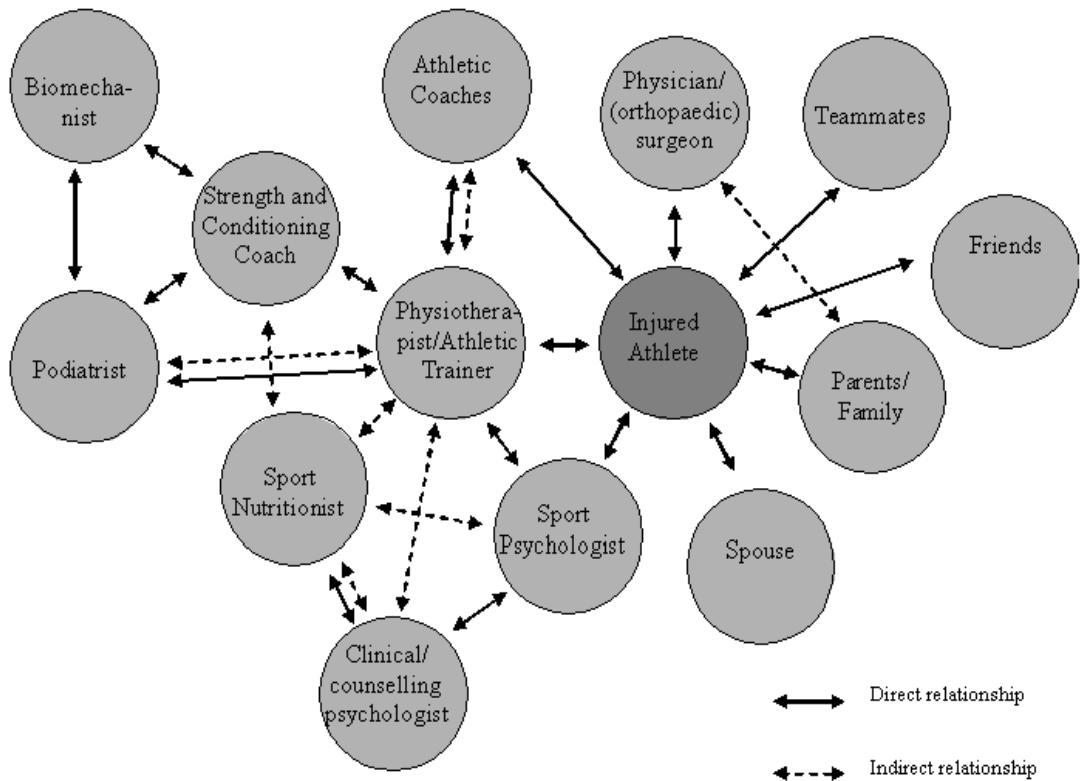


FIGURE 5. Sociogram of sports medicine team (Clement & Arvinen-Barrow 2013)

The model shows well what kind of an interactional jungle might be faced when dealing with athletes' health care. Managing these multi-dimensional systems is challenging. For an individual athlete with health concerns, acting as a key communicator between all the care providers needed might be overwhelming, and therefore this kind of approach cannot be recommended. While Reid et al (2004) argued that regular multidisciplinary team meetings are still relatively uncommon part of sporting culture, it could be suggested that meetings where all medical staff are in attendance and active participants in discussion, should be organized to enhance team-building in athletes' health care. Organizing these meetings could be included to the responsibilities of performance managers, whose role in the models presented by both Collins et al and Dijkstra et al, is to act as the connective link between the performance-dyad formed by the coach and athlete, and the health care providers. Therefore, if the idea of a performance manager were added into the picture presented in figure 5, the sociogram model would illustrate well also the intervention that the administrative personnel of the Sports Academies are required to take when aiming to improve the team approach of the athletes' health care services in the Finnish Sports Academies.

All the guidelines and theoretical models presented above form together a somewhat practical framework about how to build, assemble and administer athletes' health care in high performance sport units. They are possible to apply to the Finnish Sports Academy settings, and reflecting their ideas also give a paradigm through which the organization procedures of the Sports Academies' service can be examined.

4 RESEARCH TASK AND IMPLEMENTATION

The purpose of this master's thesis is to explore the current state of the health care services offered by the Finnish Sports Academies, and to examine and compare the organization procedures of these services in different Sports Academies. Furthermore, the purpose is to provide suggestions for how to develop the Sports Academy health care services in Finland, based on the study results and the models presented in the latest literature in the field.

4.1 Research questions

The following research questions lead the implementation of this study:

1. What is the current state of the health care services organized by the Finnish Sports Academies?
 - a. How and to what extent do the Sports Academy athletes currently use the services?
 - b. How well do the services meet the needs of the athletes and the national targets set for them?
2. How are the Sports Academy health care services organized in different Sports Academies
3. How should the Sports Academy health care services be developed in the future in order to better support the athletes?

4.2 Methodology

This study examines a process called service. Service can be defined as a *valuable action, deed, or effort performed to satisfy a need or to fulfill a demand* (Service 2015). Accordingly, service as a process includes two parties: a user with a need or a demand, and a provider aiming to meet these demands. The purpose of this study is to find out how the Sports Academy health care services should be developed in

the future in order to better support the Academy athletes. In order to provide an answer to this question, understanding of the current state from both service users' and service providers' perspectives is required to be formed first.

A study aiming to understand the current state of a service, and to observe the potential needs for its improvement, can be called an evaluation research. To evaluate means *to ascertain the worth of or to fix a value on an object* (Rossi, Lipsey & Freeman 2004, 2). Therefore evaluation is the process of determining the merit, worth, and value of these objects, and evaluations are the products of that process (Scriven 1991 as cited in Rossi et al 2004, 17). In health care research, evaluation is a term used to describe the process of studying a health care service with the aim of improving that service. Research, on the other hand, can be considered as something different from evaluation activities such that aim to improve health care. In research, the aim is to ask what the study can tell us generally about how the world functions. Evaluation in turn looks at the effect of changing how health care is delivered, though it still may be undertaken by people not involved in providing the service. Evaluation results are for those making decisions about health care service provision, while research is for a wider audience to contribute to increasing overall knowledge of a topic related to health care. (Griffiths 2009, 9.) As the results of this study mainly aim to contribute the actions of the responsible parties organizing Sports Academy activities in Finland, and does not that much pursue to provide applications that could be generalized, the evaluation paradigm fits best to its context.

Evaluation research focuses on problem solving and measuring the results and specified outcomes of the implementation of various causes, like social programs and policies (Nardi 2014, 11). Rossi, Lipsey and Freeman (2004, 29) describe social programs as organized, planned and usually ongoing efforts designed to ameliorate a social problem or to improve social conditions. Furthermore, they use the term *program evaluation* to describe the social research methods used to systematically investigate the effectiveness of these programs. Program evaluation is intended to be useful for improving programs. They can be conducted for example to get aid in decision concerning whether programs should be continued, improved, expanded, or curtailed, or to assess the utility of new programs. Evaluations typically involve assessment of one or more of five program domains: the need for the program, the design of the program, program implementation

and service delivery, program impacts and outcomes, and program efficiency (Rossi et al 2004, 2, 28-29).

Sports Academy functions can be considered as a social program, as their objective is to improve the conditions of the student athletes with the aim of supporting the management of their studies and sporting careers. Therefore the program evaluation approach can be adopted to assess the Sports Academy health care services. As the aim of this thesis is to examine the services and their organizations, the domains of program design, implementation and service delivery fits well into its context. In addition, the results of the thesis aim to contribute to the decisions on how the Sports Academy program and the Academy health care services could be improved in the future.

4.3 Data collection and analysis

In order to answer the research questions 1 and 2, and to accumulate sufficient understanding to be able to answer the research question 3, both the Sports Academies and the Academy athletes needed to be examined. This multiple-approach was made possible due to the cooperation with the Finnish Research Institute for Olympic Sport KIHU, which provided the data considering the athletes' point-of-view. This quantitative data was originally collected for the national Sports Academy evaluation, and it was known to be exploitable in a separate thesis project. The data collected by KIHU was used to create the overall picture about the Sports Academy athletes' current levels of use and satisfaction with the Sports Academy health care services, in other words, to understand the phenomena from the service users' perspective.

Furthermore, complementary data was needed in order to examine the organization of the health care services in different Academies. This need related to the aim of understanding the service organizers' point-of-view, which led to a decision to adopt also an additional research approach. To collect adequate data providing answers for the research question 2, qualitative approach were seen appropriate. Individual interviews with selected Sports Academy workers were chosen as a data collection method. Both types of data were collected and analyzed in Finnish and translated into English for this paper.

Consequently, to meet the aims and purposes of this study, and to answer the research questions the best way possible, mixed methods for data collection and analysis were adopted. Utilizing mixed methods has its benefits. It provides a broader view of the research question, and allows the researcher to interpret the phenomenon under study from different perspectives (Grbich 2013). It has been suggested that mixed methods have capacity to capture the experiences, emotions, and motivations of people providing and receiving health care, as well as the objective conditions of care delivery. Mixed methods can be used to meet practical needs for assessing and understanding the complexity of health service delivery. Use of mixed methods may also make it easier for researchers to engage in dialogues with decision makers who formulate and implement programs of delivery system change, and to better communicate with other participants in the delivery system, including its users. Through mixed methods, researchers can identify social, organizational, technical, and market contexts that shape the course of improvement initiatives. (Miller, Crabtree, Harrison & Fennell 2013.)

Despite the complexity of mixed method research, it was considered as the best approach to study the Sports Academy health care services, as neither of the two parties, Academies or athletes, were seen to be able to provide a full enough picture about the current situation of this social program aiming to support athletes' efforts to succeed in their sport careers. The following subchapters demonstrate in more detail the processes of data collection and analysis of both approaches.

4.3.1 Athlete questionnaire

The quantitative data exploited in this study was collected by using a survey questionnaire. Self-administered questionnaires are one the most common methods of data collection for surveying large samples of respondents in short periods of time. Survey research refers to a method of investigation that uses question based or statistical surveys to collect information from a sample of individuals - a population - through their responses to questions. (Nardi 2014, 72.)

The results of the questionnaire were used to answer the research questions 1a and 1b, and also to select which Academies to take under closer qualitative examination. The data was collected for the national Sports Academy evaluation project with an online

questionnaire which was mainly prepared and conducted by the Finnish Research Institute for Olympic Sport KIHU. The questionnaire aimed to evaluate the Finnish Sports Academy services as a whole but also the different types of services in detail, including the health care services. The author of this thesis contributed to preparation of the section which asked questions about the Sports Academy health care services. The online questionnaire was sent to all of the Sports Academy athletes who had finished primary education. The questionnaire was sent in the beginning of November 2014 to all Sports Academies, who then forwarded the questionnaire to their athlete-members. KIHU handed out the collected data in January 2015, after using it for the purposes of the national Sports Academy evaluation.

Data concerning the Academy health care services were first separated from data dealing with other topics of the athlete questionnaire. In this selection, answers to 17 questions ended up to be exploited in this separate study. To make the presentation of this paper clearer, the used variables were numbered from 1 to 17. Re-numbered questions 1-7 collected respondents' background information and demographics, while questions 8-17 were utilized to answer the research questions and to collect information about the respondents' medical history and overall need for medical services (table 5). Appendix 1 presents the questions and their components in more detail.

To provide statistical results, selected data was analyzed by using SPSS Statistics Data Editor. Methods like cross-tabulation and t-test were used to collect appropriate information. Due to the questionnaire design, some variables also needed to be combined and changed before the analysis. Answers for the open question in turn were analyzed by following the basic principles of thematic content analysis. Answers clearly dealing with the health care services or athletes' health in general were identified and separated from answers related to topics that dropped outside from the interests of this study. To collect, count and summarize comments concerning specific service categories, identified answers were divided into five groups that represented different health care service categories. In addition, two other thematic groups were identified after significant number of the comments was noticed to take stand on certain subject matters. One topic that clearly emerged from the data was the services prices. Other theme was found around the information, guidance and athletes' awareness concerning the Academy health care services

TABLE 5. How the athlete questionnaire was utilized to collect information and to answer the research questions

Purpose / research question	Question of the athlete questionnaire
Background information	<ol style="list-style-type: none"> 1. Gender 2. Age 3. What is your current place of studies? 4. Which Sports Academy are you a member of? 5. What is your sport discipline? 6. In which level you compete in your sport at the 7. On average, how many hours a week you practice?
Athletes' medical history	<ol style="list-style-type: none"> 8. During the past 12 months, have you suffered from an injury or illness that required medical treatment? 9. If you have suffered from an injury or illness that required medical treatment during the past 12 months, how many times have you visited a doctor during this period of time?
1a. How and to what extent do the Sport Academy athletes currently use the services?	<ol style="list-style-type: none"> 10. Was your injury/illness (last 12 months) treated through the health care services coordinated by your Sports Academy? 12. Which factors prevent you from utilizing the Sports Academy services?
1b. How well do the services meet the needs of the athletes and the national targets set for them?	<ol style="list-style-type: none"> 11. Evaluate the quality of the Sports Academy services you have used during the past 12 months 13. Have you had athlete's health check? 14. Have you had a muscle balance test? 15. By answering the following statements, evaluate the current state of your health care 16. How well does the Sports Academy medical service work? Evaluate the following statements concerning the treatment of your injury/illness
3. How should the Sports Academy health care services be developed in the future in order to better support the athletes?	<ol style="list-style-type: none"> 17. How do you think the Sports Academy service should be developed in order to support you better?

Questionnaire respondents

The Sports Academy evaluation questionnaire was sent to 6193 Sports Academy Athletes. 1979 athletes responded to the questionnaire which made the response rate 32%. 53,5% of the athlete questionnaire respondents were male and 46,5% were female. The highest percentage of the respondents was students in high school level (table 6), which also shows in the respondents' age scale (figure 5). Slightly more than a third of the respondents were labeled as top-athletes; athletes who compete either in juniors' or adults' national teams or in international (Olympic, Paralympic, World Championship or European Championship) levels (table 7). 71% of respondents reported that they practice 10-19 hours a week, while 20,4% had practice more than that (table 8).

TABLE 6. Respondents' place of studies

Place of study	n	%
High school	656	32,7
Sports-oriented high school	625	31,7
Vocational school	167	8,5
Sports-oriented vocational school	70	3,5
University of Applied Sciences	137	6,9
University	255	12,9
Other	21	1,1
Not studying	52	2,6
Total	1972	100

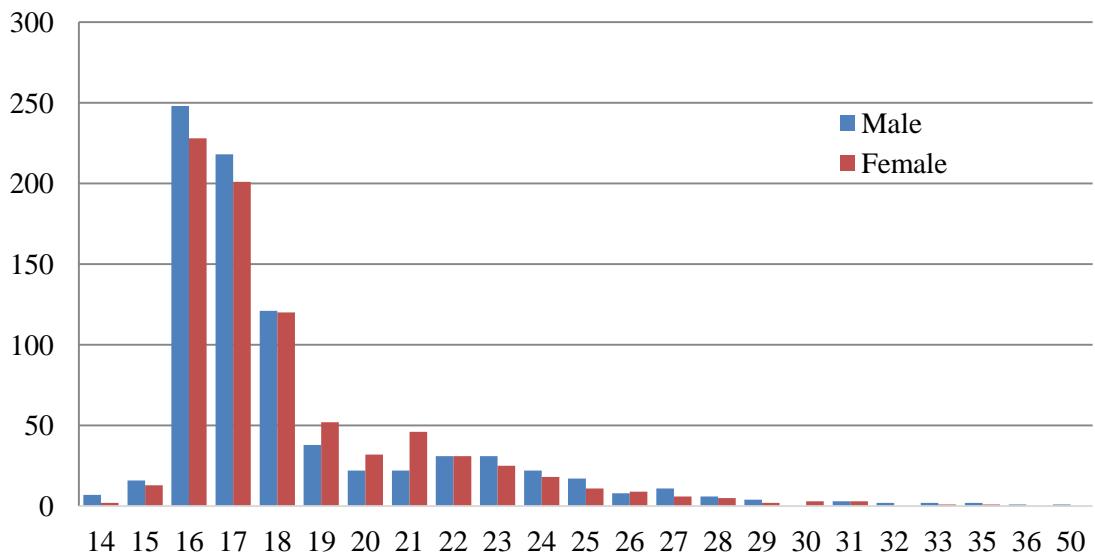


FIGURE 5. Respondents' age by gender (n=1642)

TABLE 7. Respondents' sporting level

Sport level	n	%
Adults' international level (Olympic, Paralympic, WC, EC)	125	6,4
Adults' national team	124	6,3
Youth's international level (Youth Olympic, Paralympic, WC, EC)	160	8,2
Youth's national team	346	17,7
National level	966	49,4
Regional	235	12,0
Total	1956	100

TABLE 8. Respondents' level of weekly practice hours

Practice hours per week	n	%
< 10	168	8,6
10-14	756	38,7
15-19	631	32,3
20-24	327	16,7
25 >	72	3,7
Total	1956	100

4.3.2 Academy interviews

The quantitative data collected with the athlete questionnaire was not adequate to answer the research question 2, so complementary data was needed. The aim was to find out how the health care services are organized in different Sports Academies. Within the framework of this study not all the Academies were possible to be examined. Strategy with selecting just a few Academies under closer examination, were seen as a suitable option to produce adequate information. In social research, qualitative procedures provide possibilities to collect data describing individual's experiences, and to answer the questions *why* and *how*, not just *what*, *where* and *when*. Therefore qualitative-oriented approach provides a wider framework to understand the service structures and organizational procedures concerning the Sports Academy health care services.

Interviews are one of the methods used to collect qualitative data (Brinkmann & Kvale 2015). A situation where the aim of the research is to create a factual description of a certain phenomenon, process or practices, expert interviews can be used. Expert interviews are a specific form of semi-structured interviews, in which the interviewees are of less interest as persons than the information they are assumed to have about a certain field of activity. The selection of the interviewees is based either on their institutional position or other involvement in the process under study. (Alastalo & Åkerman 2010). As the aim of this study is to find out the organizational structures and procedures of the Sports Academies' health care services as they are, not as they are perceived, expert interviews were seen to be applicable approach and chosen as a method to collect the data aiming to answer the research question 2. Personnel in the Sports Academies were expected to have the sought in-depth information about the service practices, and were chosen as expert interviewees.

Based on the results of the athlete questionnaire, three Academies were chosen to take under closer examination. These targets were decided to be selected within a group of the biggest Academies, because the results were expected to be more useful if the data has been collected from Academies where the organization and networks are wide and well-established enough. The results of the athlete questionnaire also contributed the selection. Some Academies came to prominence concerning e.g. the levels of usage and

satisfaction. To reveal differences between different Academies, these kinds of findings were used to guide the selection of potential targets for the interviews.

Three selected Academies were contacted by sending an e-mail to their Academy coordinators to inquire about their willingness to participate in the thesis study. Two of the coordinators immediately consented to take part, while one of the messages did not obtain a reply. Therefore an optional Academy was contacted and included into the study. The Academies examined were Päijät-Häme, Keski-Suomi and Oulunseutu Sports Academies. The targets differ from each other by their geographical locations and athlete demographics, as they all operate in three different regions. Two of these Academies take place in cities with a lot of university students, while the third one consists mainly of high school students.

A semi-structured approach was chosen to make sure the interviews are consisted of the same topics and the results will be comparable. Question themes for the interviews, as well as the specific questions (appendix 2), were formed in Finnish, based on the theoretical framework related to athletes' health care management, and the subject matters that emerged during the analysis process of the questionnaire results, and evoked the researcher's interest. The interviews consisted of four themes: organization of the services, service accessibility and information, usage of the services and development of the services.

The interviews were conducted in Finnish with employees in the selected Sports Academies in June 2015. The qualitative data was transcribed immediately after the collection was completed, concentrating on the contents of the discussion. Details that were found irrelevant were excluded from the transcription. At this point, 26 pages size A4 of transcribed material was produced. The data-driven analyzing process was guided by the thematic positioning of the questions and the theoretical framework created with the literature review. The most important themes were identified and summarized, and reorganized under relevant topics. The analysis was run mainly in Finnish, and only the selected citations were translated into English. The citations were edited to enhance readability, however aiming to preserve the original contents and tones of the statements. To improve the transparency of the linguistic interpretations made, the citations are presented in both languages.

Some written materials were also used to collect background information about the three Academies examined. Descriptions about the Academies' basic operations, information concerning the demographics of the athletes as well as the prices of the health care services in each Academy were collected by using Academy websites and brochures, annual action reports and price lists that the interviewees were asked to sent. Due to some communicational inconveniences and differences between the contents of the materials received from the interviewees, background information about the three Academies was not received to the same extent. For this reason, certain pieces of information remained missing.

Academies examined

Päijät-Häme Sports Academy (PHSA) was started in Lahti region as a project in 2005. It was coordinated by Lahti University of Applied Sciences but currently it is an independent network association. PHSA organizes its activities through three levels; silver, gold and platinum levels. Silver level consists of the quota of athletes studying in the sport-oriented high schools and vocational schools, or in the Universities of Applied Sciences operating in the region. There is no fee for silver level athletes, but there are only eligible to participate the Academy-run morning practices. Gold level status must be applied separately. Accepted athletes pay an annual fee which entitles to all support services. Platinum level membership cannot be applied, but consists of valid gold level athletes who have reached a certain level of sporting success. Platinum level athletes receive all gold level services, but also some additional benefits. Gold and platinum level fees are either 70 € or 100€ a year. The bigger fee is collected from athletes who represent cross-country skiing, ski jumping or judo, as for them the fee covers also the costs of a paid coach.

Oulunseutu Sports Academy (OSA) takes place in the city of Oulu, and it started its operations in 2001. The Academy network consists of a local sport-oriented high school, units of the vocational education, University and University of Applied sciences. All the athletes accepted to OSA are entitled to use all Academy services free of charge, as there are no status level divisions or membership fees. The costs are covered by the educational institutions where the athletes study in. Fees are collected only from athletes who are not studying in the partner institutions or not studying at all.

Keski-Suomi Sports Academy (KSSA) is located in Jyväskylä. Academy serves a functional name of the Central Finland Sports Training Centre Foundation. The Foundation was established in 2001 by the City of Jyväskylä, University of Jyväskylä, Jyväskylä University of Applied Sciences, other regional education institutions and local organizations and a group of sport association which consisted of the Finnish Athletics Association, the Finnish Swimming Association and the Finnish Gymnastics Federation. The actual operations of KSSA began in March 2002. To use the Academy services athletes are required to pay an annual fee of 120€ or 220€. Different fee categories entitle do different services. Services are free of charge for selected top-athletes who are selected case by case.

5 RESULTS

The main objective of this master's thesis was to explore the current state of the athletes' health care services offered by the Finnish Sports Academies, and to examine the organization of these services in different Academies. This chapter presents the results of the study by bringing together the findings of the athlete questionnaire and the expert interviews conducted in three different Sports Academies. First section takes a look at the current state of the Sports Academy health care services from the users' perspective. Second section provides descriptions and comparisons about how the health care services are organized in three examined Academies. Third section shows how the users and organizers of the services wish them to be developed in the future. The final section summarizes all findings, and provides suggestions for development of the athletes' health care services in the Finnish Sports Academy settings.

5.1 Current state of the Sports Academy health care services

The current state of the Sports Academy health care services was examined by using the results of the athlete questionnaire. The findings are presented in four themes representing different factors evaluated.

5.1.1 Sports Academy athletes' need for medical care

To understand what kind of a demand there is for Sports Academy-run health care services, Academy athletes' medical status and need for health care in general were evaluated. Over half of all athlete questionnaire respondents reported that, during the past 12 months, they have suffered from an injury or illness that required medical treatment. These athletes had visited a doctor on average 3,9 times during the same given period of time. The injury rate was higher among the respondents labeled as top-athletes (athletes competing either in juniors' or adults' national teams or in international levels): 63,4% of them had suffered from an injury or illness. This difference was found statistically significant ($p=0,001$). Also the number of doctor visit was higher among the top-athletes, but statistical conclusions could not be made.

Statistically significant differences were also found between athletes performing at different sporting levels ($p=0,009$). The biggest injury incidence was found among the athletes competing in junior's international (64,3%) and national team (64,2%) levels. In adult's international level the number of athletes who had suffered from an injury or illness was 62,9%, and in adult's national team level 60,5%. The number was lowest among regional level athletes (50,0%), while in national level it was 57,6% Statistically significant differences in injury incidence were not found between female and male athletes ($p=0,047$) nor individual and team sport athletes ($p=0,770$).

Figure 6 shows the injury rates in 20 different Sports Academies, based on the questionnaire results. The rate was seemingly higher (75%) in Keski-Suomi Sports Academy, and remarkably lower (20%) in Porvoo Sports Academy, when comparing to the mean value.

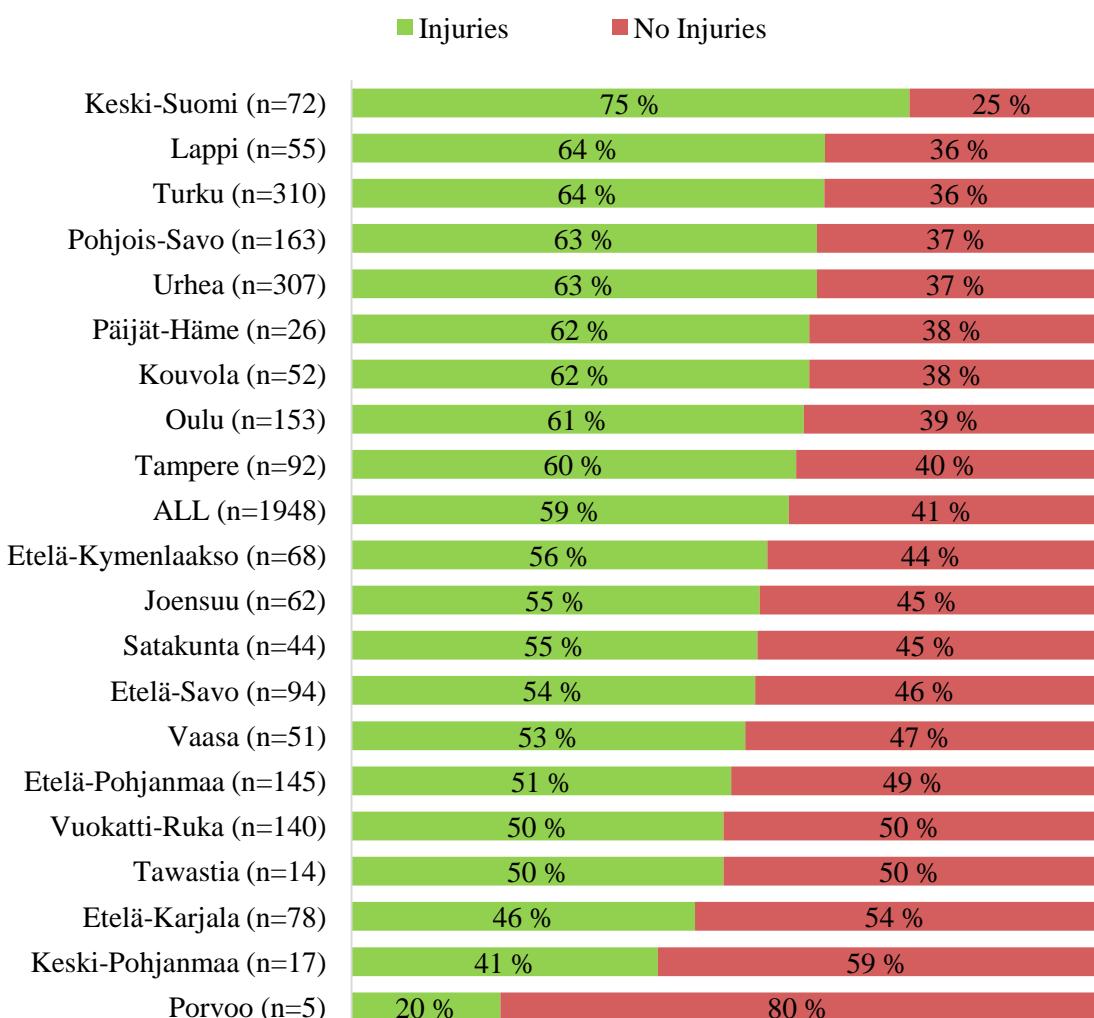


FIGURE 6. Academy athletes' injury rates during the past 12 months

Correlation between the injury incidence and weekly practice hours (table 9) as well as the number of reported doctor visits were also examined. Athletes practicing more than 25 hours per week reported injuries the most. The lowest injury incidence was among the athletes who had practiced 10 to 14 hours per week. These differences were found statistically significant ($p=0,001$). No correlation was found between weekly practice hours and the number of doctor visits.

TABLE 9. Academy athletes' injury incidence in different weekly practice hour levels

Practice hours per week	During the past 12 months, have you suffered from an injury or illness that required medical treatment?					
	Yes		No		Total	
	n	%	n	%	n	%
< 10	98	58,3	70	41,7	168	100
10-14	397	52,8	355	47,2	752	100
15-19	391	62,5	235	37,5	626	100
20-24	201	62,8	119	37,2	320	100
25 >	65	67,7	31	32,3	96	100
Total	1152	58,7	810	41,3	1962	100

The results suggest that Sports Academy athletes' probability to have an injury or illness requiring medical intervention rises when weekly practice hours are increased. However, higher practice hours were not found to increase the usage of medical services in general, but the higher competition level might indicate increased service usage when comparing to athletes competing in lower levels. The results also show differences in injury incidence between athletes in different Sports Academies, but the findings could not be statistically confirmed.

5.1.2 Usage of the services

To evaluate the importance of the Sports Academy health care services for the Academy athletes, the usage rates of each service categories were examined. The percentage of usage within the respondents was 49% in preventive medical services and 45% in

medical services for treating injuries or illnesses. 43% of the respondents had used the mental coaching services, 42% preventive physical therapy, 37% nutritional guidance, 36% physical therapy for rehabilitation and 36% massage services.

Only 13,3% of the respondents reported that they have treated their medical conditions in the health care services organized by their Sports Academies, while 72,7% of them had sought treatment from somewhere else (figure 7). The rate was highest in the Keski-Suomi Sports Academy, were 37,3 % of the reported conditions were treated through the Academy services. Remarkably, in two Academies, Porvoo and Tawastia, none of the athletes had used the Sports Academy health care services. Still, the injury incidence among their athletes was 20% and 50%, which shows that their athletes are generally in a need of medical care. The findings about the service usage levels were found statistically significant ($p=0,000$).

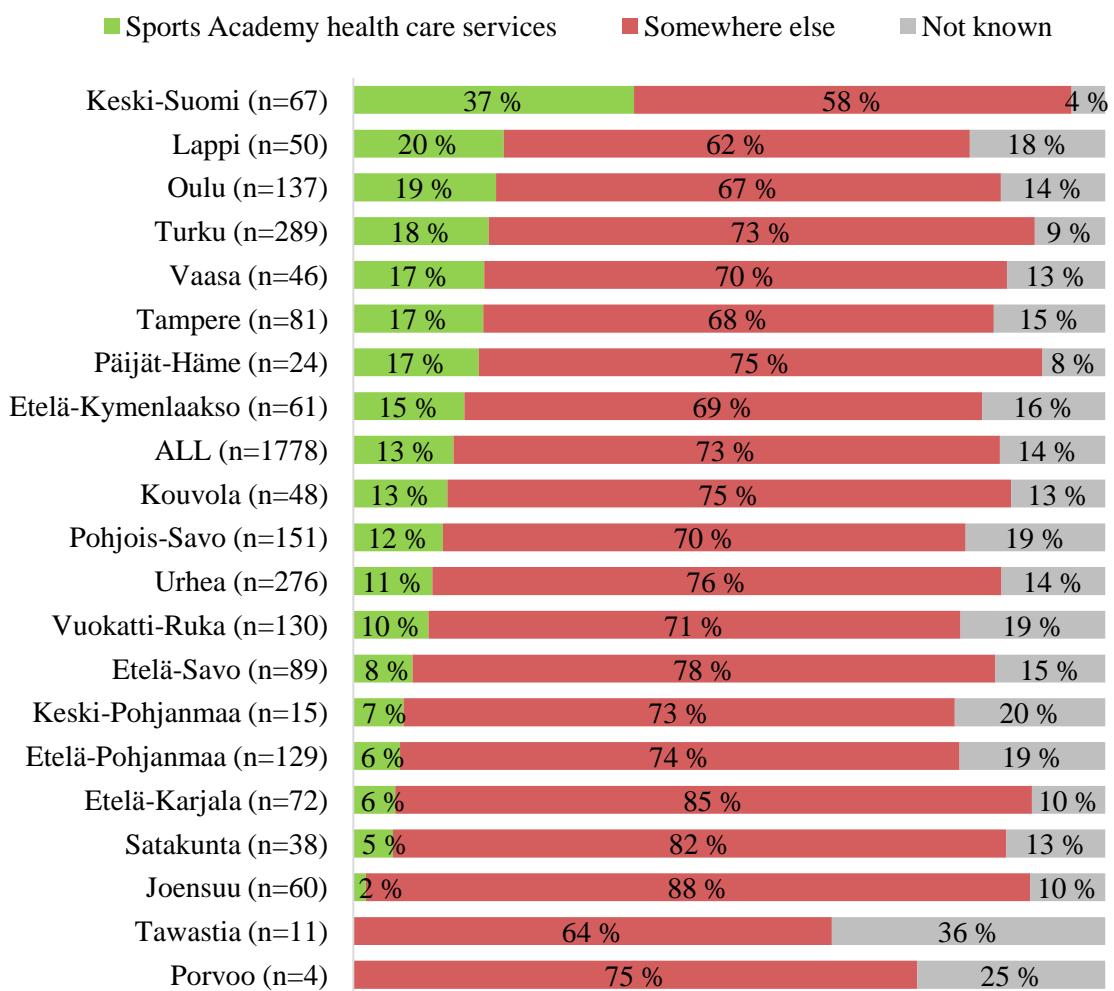


FIGURE 7. Place where athletes' reported injuries and illnesses were treated

The results show that the usage level of the Sports Academy health care services is somewhat low, especially when comparing to the Academy athletes' general need for medical care. Therefore a question about the reasons why the Academy athletes do not use the services more appeared. Due to the question positioning of the athlete questionnaire, results concerning the reasons that inhibit athletes' use of the services were only found out concerning all Academy services. Even though the part of the health care services could not be examined separately, the results might be directive about the factors that have affected the health care service usage.

As figure 8 shows, the most important reason inhibiting the usage of the Sports Academy services was reported to be lack of awareness considering the existence of the services. The second important reason was using similar kind of services offered by another service provider, for example a sport club. The third most important reason was reported to be too high service prices.

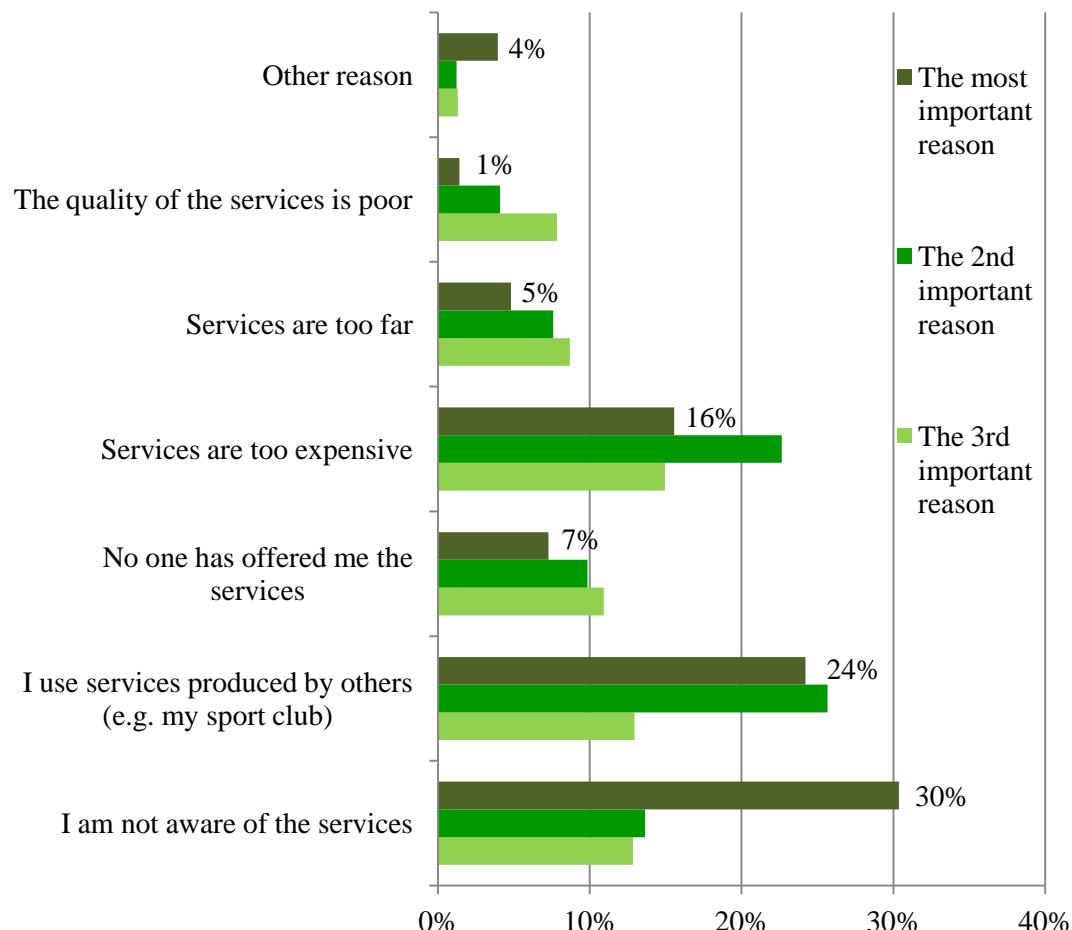


FIGURE 8. Athletes' reasons not to use the Sports Academy health care service

5.1.3 Athletes' experiences about service contents and quality

Athletes' overall satisfaction with the Sports Academy health care services was examined on a scale from 1 to 5 (1=poor, 5=excellent). The results were collected by combining variables that measured the perceived quality of 7 health care service categories, including athletes who had used at least 4 out of 7 categories. The mean of the Academy-specific overall satisfaction rates was 2,3. Academy-specific means varied from 1,4 to 2,7 (figure 9). Only three Academies raised above the rate of 2,5

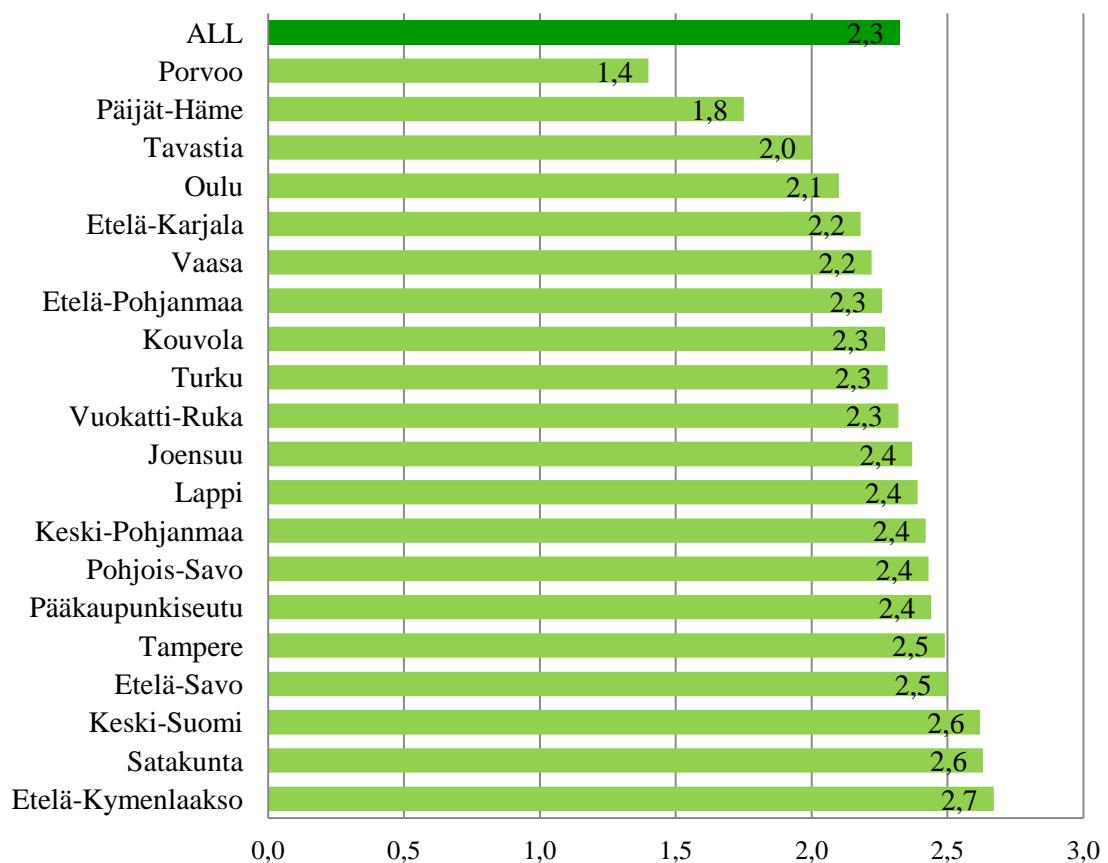


FIGURE 9. Academy athletes' overall satisfaction with the Sports Academy health care services (on a scale from 1 to 5)

Athletes' satisfaction with different service categories were also examined separately (figure 10). The results show that more than half of the respondents evaluate the service quality as excellent or good in all 7 service categories.

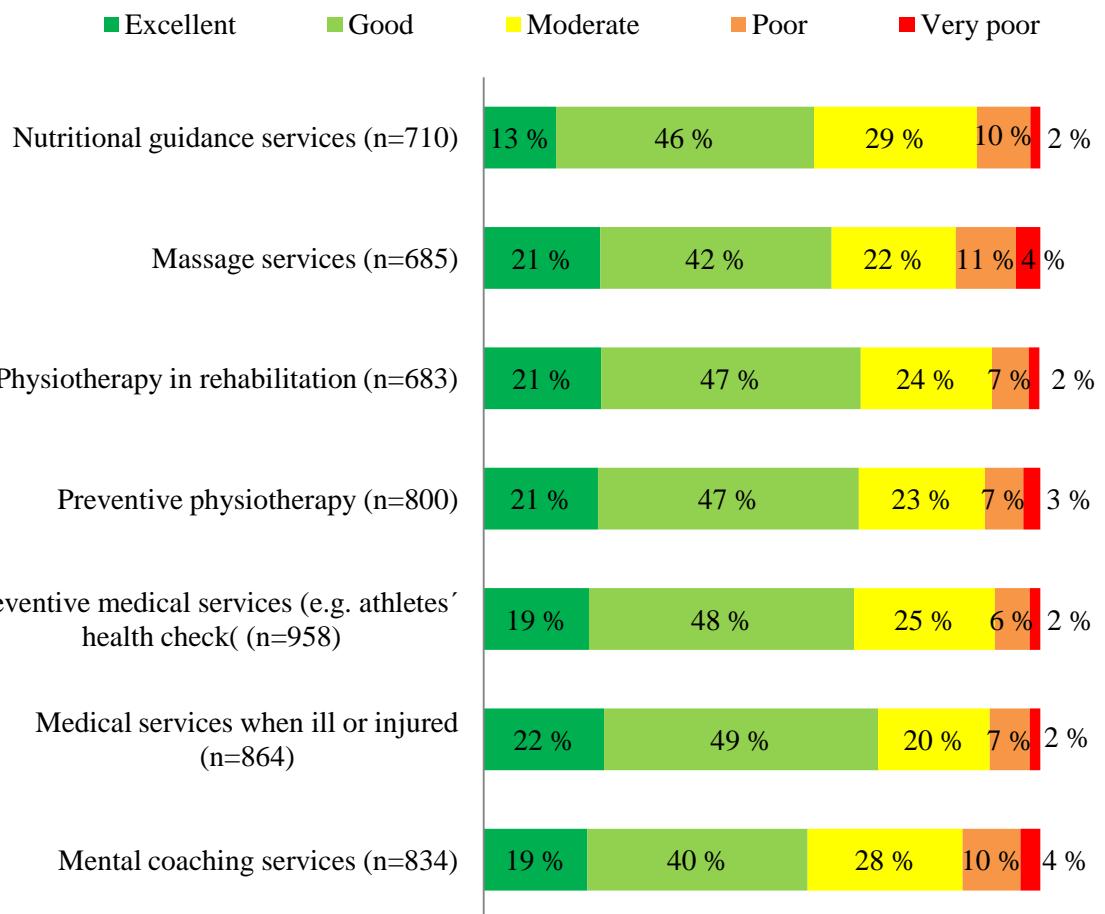


FIGURE 10. Academy athletes' views on the quality of different Sports Academy health care service categories

To reveal how well the Sports Academy medical services currently work, the Academy athletes' views on the current state were examined with 8 statements (figure 11). The results show that on average half of the respondents agreed with the positive statements concerning the contents and procedures of the Sports Academy-run medical services they have used.

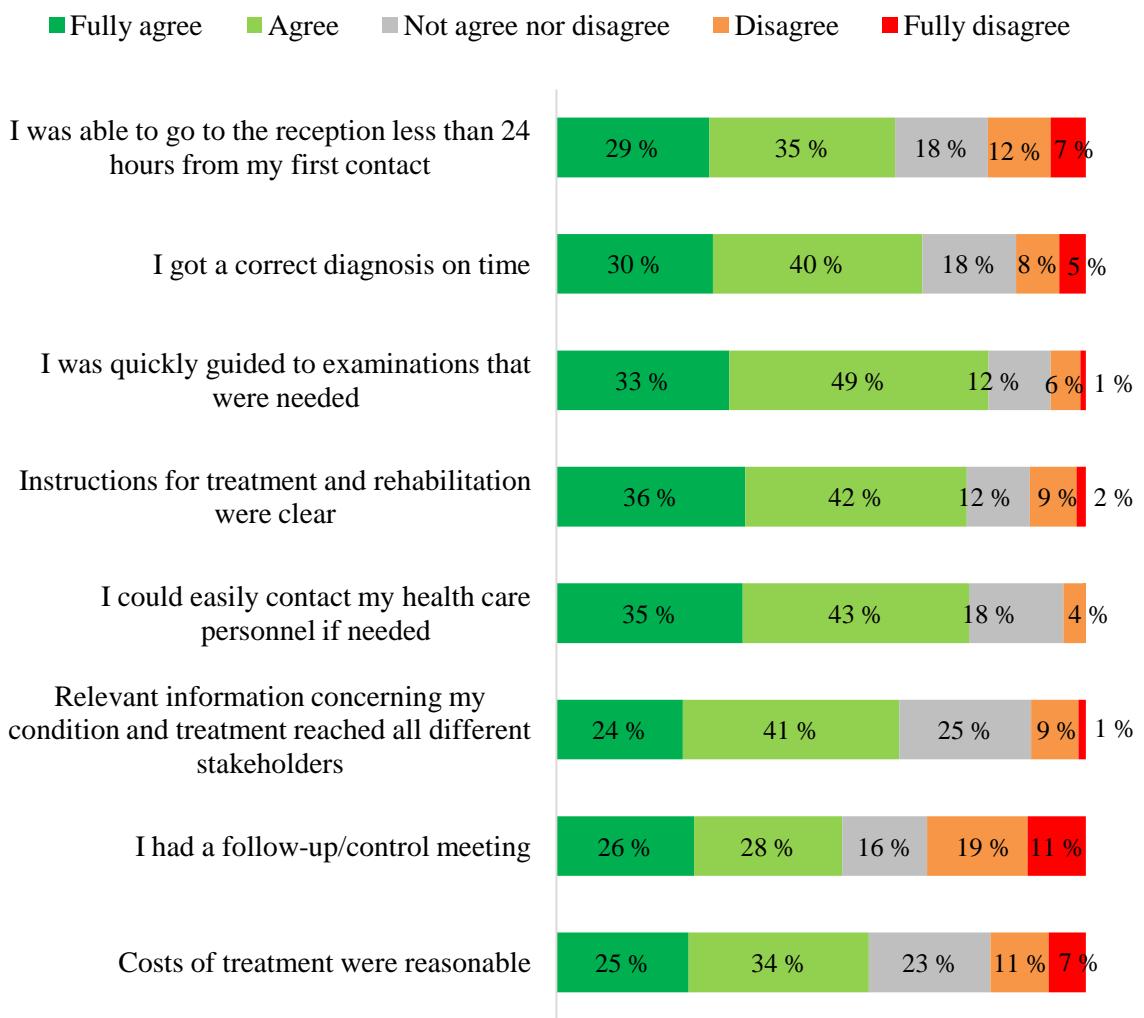


FIGURE 11. Academy athletes' views on the Sports Academy medical services

5.1.4 Correlation with national targets

Table 2 in the chapter 2.2.1 presented the targets that have been set for the Sports Academy health care services. To find out how the existing services currently correlate with these targets, the results of the athlete questionnaire were exploited.

One of the targets was to conduct annual health checks and muscle balance tests for all Sports Academy athletes. Based on the results of the athlete questionnaire, 37% of the respondents have had muscle balance test during the past year (figure 12). The rate was higher among the top athletes; 47 % of them reported to have a muscle balance test. Half of all respondents have not had any kind of health check (figure 13).

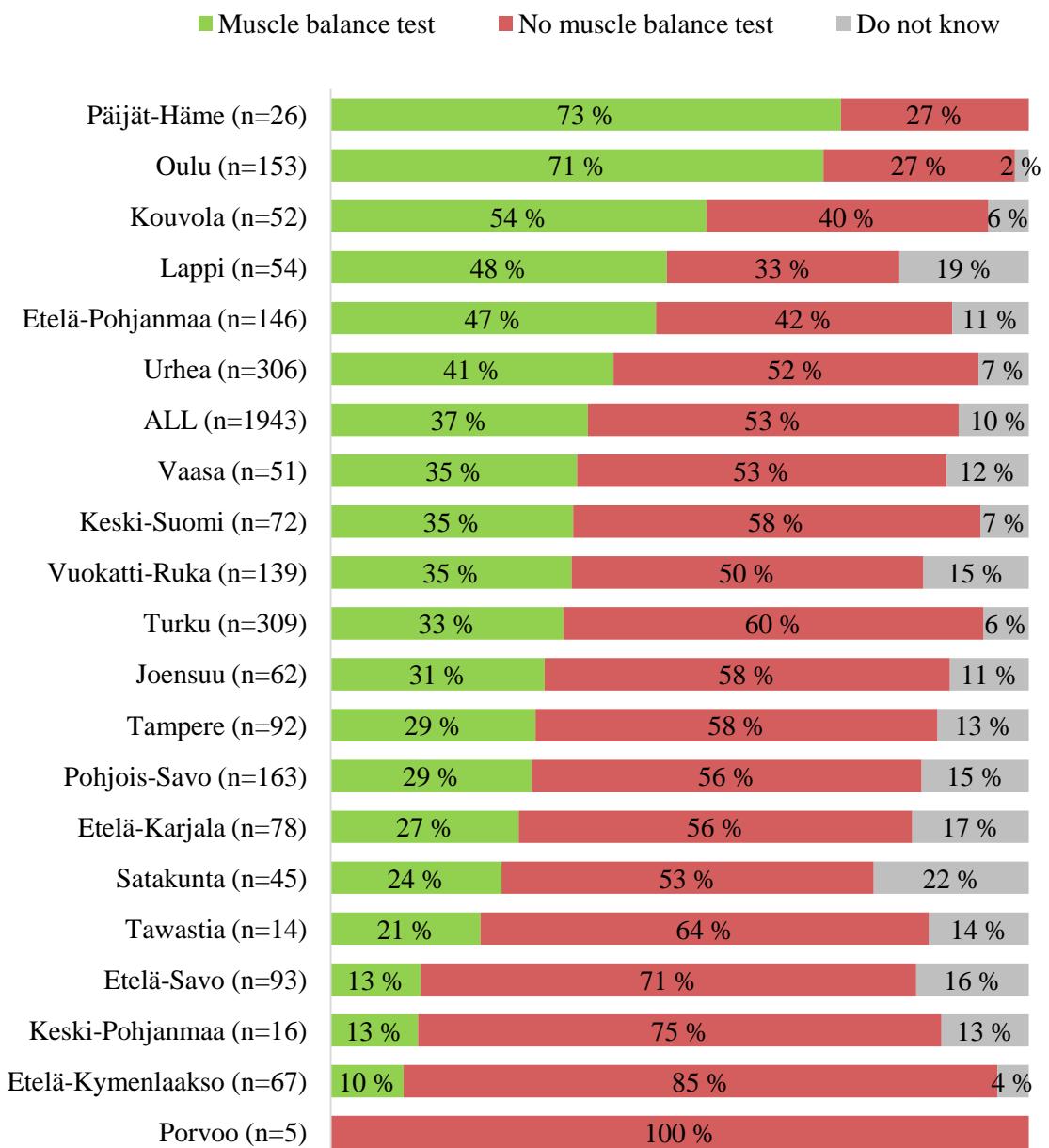


FIGURE 12. Number of Academy athletes who have attended a muscle balance test

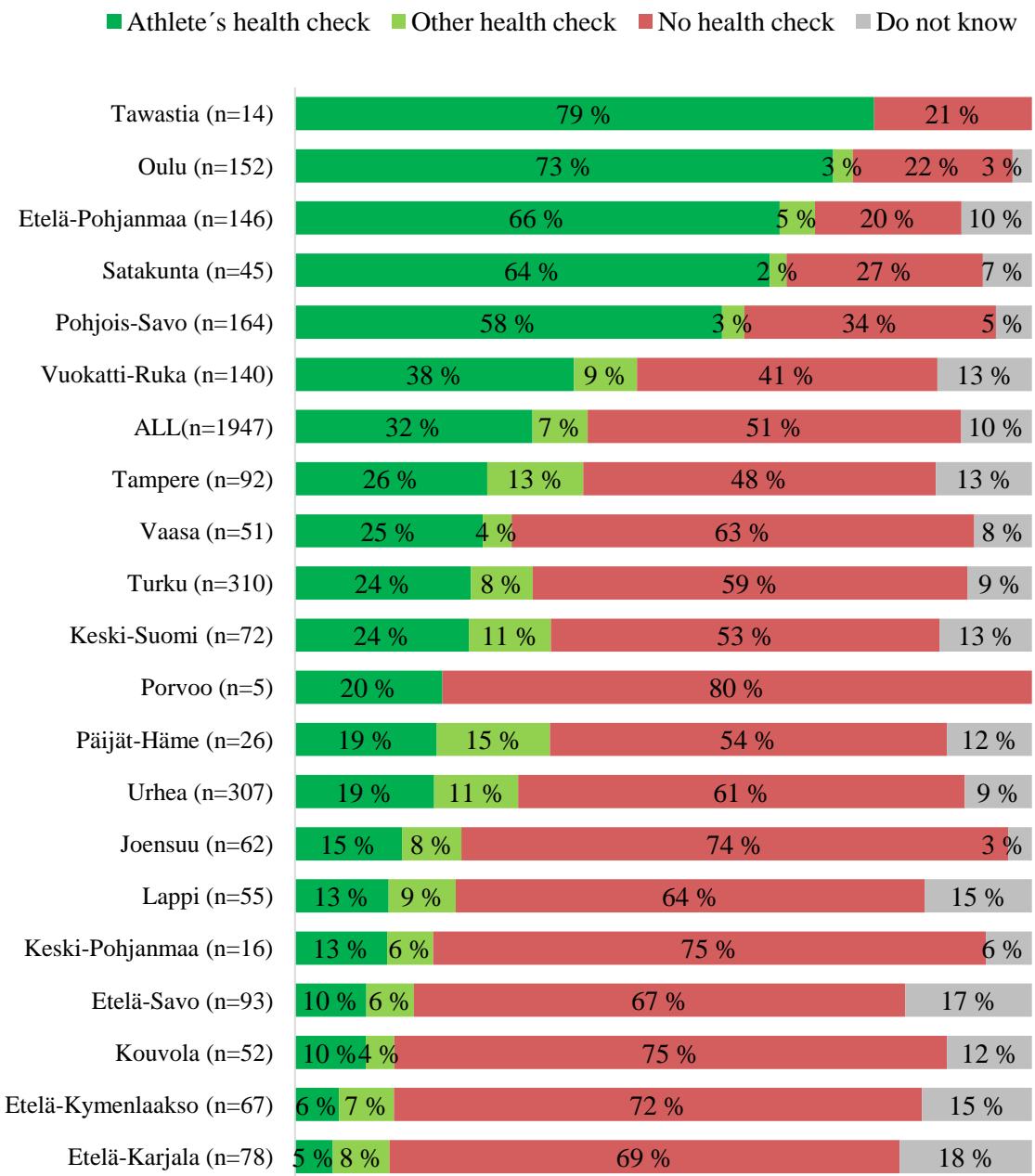


FIGURE 13. Number of Academy athletes who have attended a health check

Another target was to create a system of personal doctors and physiotherapists, and to integrate preventive physiotherapy into athletes' daily coaching. Parts of the question 15 showed respondents' views on to what extent these targets have been put into practice in different Academies this far (figure 14). Less than 10% of the respondents reported that they have a personal doctor. 22% of respondents agreed that a physiotherapist has been involved in their coaching. However, most of the respondents felt that recovery issues have been well taken into account in their coaching.

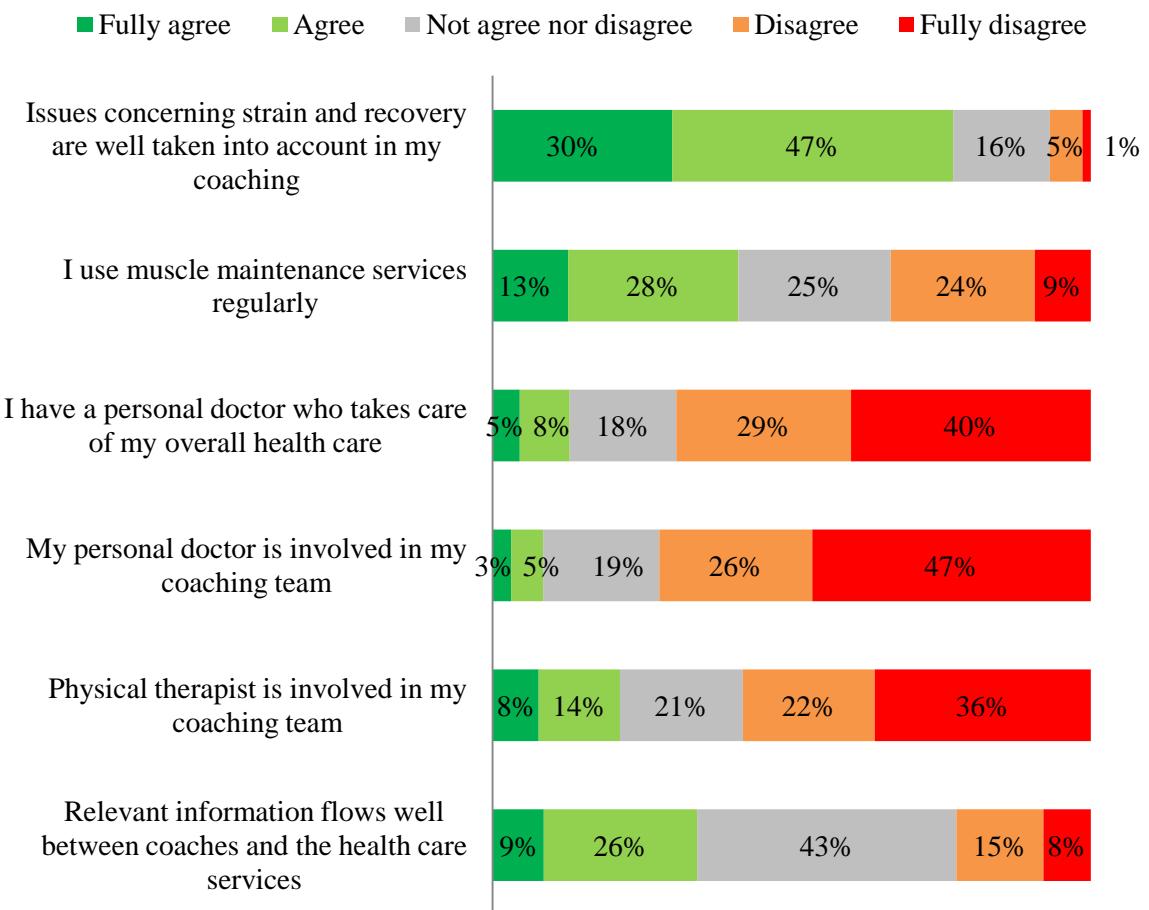


FIGURE 14. Academy athletes' views on the current state of their preventive health care practices

Based on these findings presented above, it can be stated that at the moment the integrated health care and coaching approach is not yet at the target level in the Finnish Sports Academies. Also it is noticeable that between different Academies, there are big differences in the percentages of athletes who have had preventive health care check-ups.

5.2 Organization of the Sports Academy health care services

This section provides answer to the research question about how are the Sports Academy health care services organized in different Academies. The topic is approached through the data collected from three Academies by interviewing the Academy

coordinators. Structures of the service provision and administrative procedures in these different Academies are presented and compared with each other.

5.2.1 Provision and prices

Päijät-Häme Sports Academy

In PHSA, different health care service categories are organized with separate providers. Medical services are provided through two private health care service centers: Mehiläinen and Terveystalo. Both centers have a named sports coordinator through which the Sports Academy athletes are recommended to book their doctor's appointments. The coordinators aim to recognize athletes' needs and send them to meet the most suitable specialist. To facilitate the Academy athletes' fast access to medical services, the medical center coordinators can book appointments which are not usually available for other customers. The Academy pays 50% of the doctor's fee if it is not covered by the insurance of the athlete. Therefore the price of doctor's appointments that athletes need to pay may vary a lot, depending on the policy of insurance and the charge of the treating practitioners. Athletes' health checks are however free of charge for all athletes of the Academy.

In PHSA, physiotherapy and massage services are produced in a private company which the Academy has a cooperation contract with. The company offers reduced prices for Academy athletes: deductible price is 20€ for a 45-minute meeting. This price is valid for each athlete for 10 annual meetings. The company is also cooperating with the physiotherapy education unit of Lahti University of Applied Sciences. Physiotherapy students conducting their clinical practice periods in the company serve the Academy athletes free of charge. Muscle balance tests are covered by the Academy and are therefore offered free of charge for all PHSA athletes. In addition tests are exploitable as many times as wanted.

Both nutritional guidance and sport psychologist's services are offered by private contract providers whose services PHSA athletes can use with lowered prices. For nutrition guidance services the Academy pays two thirds of the original service price, which leaves the athlete to cover one third, namely 10€. Sport psychologist's appointment costs 75€ of which the Academy pays 35€, and the athlete need to cover

40€. The mental coaching meetings with lowered prices are limited for 7 times a year for each athlete, but the number is discretionary if an athlete has a clear need for more appointments.

Oulu Sports Academy

In contrast to PHSA, OSP provides all the health care services through one contract cooperator, a private sports medicine clinic. Also the price policy is divergent as all the services are free of charge for all OSP athletes, regardless of their status or competition level. The clinic offers medical services, physiotherapy and nutritional therapist's services mainly focusing on athletes' preventive health care. Therefore the free-of-charge services consist of first visits and preventive operations by doctors, physiotherapists and dietitians. In a case when an athlete needs more long-term treatment or medical imaging, the athlete must cover the costs with his insurance or other sources. Both athletes' health checks and muscle balance tests are also free for all athletes. Massage services are provided through a contract massage therapist. The Academy offers a working space for the masseur which allows him to serve the athletes with lowered prices.

In addition to offering athletes a possibility to exploit free nutritional guidance, OSA also uses an online-based nutrition program for all their athletes. In the web service athletes can fill in a nutritional diary which their own coaches can then exploit in their coaching. The private clinic itself does not provide sport psychologist's services. However, the clinic has delivered these services for the athletes in a need through buying it from private outside providers. These services have either been charged straightly from the athlete or covered from the Academy's resources. In 2013, OSP started a mental coaching programme which aim is to integrate the mental dimensions into athletes' training. In the near future the Academy intends to launch new service cooperation and will include also sport psychologists' reception in their health care service supply.

Keski-Suomi Sports Academy

The organizations of the health care services in KSSA differ from the two other Academies examined. The biggest difference appears concerning the medical service, which is offered in a form of a consultation hours, held weekly in a certain day, offered

free of charge for all Academy's athletes. The aim of the consultation is to offer easy, low-threshold access to medical services as athletes can go to meet a doctor without booking an appointment. The consultation hours are however not meant for emergency cases or to conduct specific treatment measures. If medical imaging or other further treatment is needed, athletes need to use other service providers, which are often the local private medical centers, and cover the costs by themselves.

Concerning the Sports Academy health care services, KSSA makes close cooperation with the Research Institute for Olympic Sports KIHU and their sport science unit. Physiotherapy and sport science services supporting coaching and performance analysis are offered free of charge for the selected top-athletes through these cooperators. For all other athletes these services are offered with reduced prices. Cooperation is also done with the physiotherapy education unit of Jyväskylä University of Applied sciences. Physiotherapy students are conducting their clinical practice periods in the Sports Academy organization and their work is targeted to team sports, mainly football and floorball. Also the local ice hockey club, which is part of the Academy, has their own physiotherapy student working with ice hockey players a year around.

KSSA is cooperating with three nutrition specialists offering their services with reduced prices for all KSSA athletes. Top-athletes can have a nutritional diary analysis free of charge. Cooperation has also consisted lectures. Sport psychology is offered through professionals in KIHU and University of Jyväskylä sport psychology unit. Athletes are sent to these professionals who have their own price lists. In KSSA the organization of sport psychology services is currently under development. Sports Academy does not offer massage services. This is based on the experience that athletes prefer their own masseurs so Academy's own contract-providers are not seen to be needed.

KSSA's approach to athletes' health checks and muscle balance tests is different from two other Academies. In PHSA and OSA, these check-ups are systematically offered for free, and athletes are strongly encouraged, even forced, to use these services. KSSA in turn does not automatically run these checks for their athletes. However in KSSA physiotherapist's services are integrated into athletes' daily training sessions, and muscle balance tests are can be conducted if there is a clear need for them. Same goes with the health checks. They are conducted only if the doctor sees it useful. Otherwise

both services are available but the athletes must cover the costs by themselves. KSSA interviewee however discussed the possibility to conduct health checks systematically for younger athletes in the future.

The forms in which the health care services are offered vary a lot between the three Academies examined. The comparison also shows that there are remarkable differences in the price levels (table 10). Depending on their place of residence, the athletes pay very different amounts for using the services, which strongly puts them into unequal position with each other.

TABLE 10. Comparison of health care service prices in three Sports Academies,
(*) example fee from service provider's price list, (-) service not included in the Sports Academy service supply

Service	Päijät-Häme	Oulu	Keski-Suomi
Academy membership fee	100€ / 70€	no fee	220€ / 120€
Medical services:			
Doctor's consultation	50% off	free	free
Health check	free	free	no data
Medical imaging	-	-	-
Medical laboratory tests	-	free/ price list fees	-
Physiotherapy:			
PT's consultation	20€ (45min)	free	free /45€ (45min)*
Muscle balance test	free	free	no data
Massage	20€ (45min)*	35€ (60min)*	-
Nutritional guidance	10€	free	price list fees
Sport psychology	first visit free others 40€	free	no data
(Performance analysis/ sport science laboratory tests)	-	-	free/reduced prices

5.2.2 Organizer's view to health care service usage

The results of the athlete questionnaire revealed that the usage of the Sports Academy health care services have been at somewhat low level. The results also brought up that

to a great extent the Academy athletes are not aware of the existing services Academies provide-including the health care services-which reduces their overall service usage. Due to these findings it was seen necessary to examine what kind of measures the selected Sports Academies use to promote the usage of the health care services, and how athletes are guided and informed about the services they are entitled to. The interviews also provided service organizers' perspective to the low levels of service usage.

5.2.2.1 Monitoring service usage

Aiming to increase the service usage requires knowledge about the prevailing situation. Surprisingly the interviews revealed that none of the three Academies systematically collect information about how much their athletes use the health care services. Therefore the quantity and volume of the service usage is not precisely known in the Academy offices. The interviewees mentioned however, that the numbers are possible to find out by processing the monthly or annual invoices. In practice this is not actively done. PHSA interviewee opened up these procedures as following:

We get a monthly bill for example from physiotherapy, and it is carefully specified in it which athletes have used the service and how many times. But this information is not kept after that. When the bill comes we check that everyone has been entitled to the service, and then the bill goes to files. We don't keep any record of it which is perhaps a bit bad thing.

[Esim. fysioterapiasta tulee kuukausittain lasku, missä on tarkkaan eritysty se, minkä nimiset urheilijat ovat käyneet ja kuinka monta kertaa, mutta se tieto ei jää meille sen enempää. Kun lasku tulee, niin katsotaan, että kaikki ovat olleet oikeutettuja palveluun ja sitten lasku menee mappiin. Niistä ei sen enempää pidetäkään kirjaan, mikä on ehkä vähän huono homma.]

Päijät-Häme Sport Academy coordinator

The interviewees however had strong views on what service categories are the most used in their Academies. PHSA interviewee estimated that the most used services among the health care services supply are the physiotherapy and massage services. She also stated that nutritional guidance seems to have grown its popularity recently. OSA interviewee in turn estimated that with quantitative measures health checks and muscle

balance tests have been the most used services among OSA athletes. He however brought up his own view about what is the most *important* service to athletes:

I think that, from the point of view of an individual, the most important service is that the athlete would be able to go to the first visit with a doctor or a physiotherapist. That they are not left to wonder why is the foot sore now. But more like that they go to the visit and maybe immediately get some clarity to their situation and the direction to which to go. At least what I have heard, that is the most important service.

[Näkisin, että yksilön kannalta tärkein palvelu on se, että urheilija pystyisi menemään ensikäynnille lääkärin tai fysioterapeutin vastaanotolle. Että he eivät jää miettimään, että miksihän jalka on kipeä nyt. Vaan että he kävät siellä ja ehkä saavat selvyyden [tilanteesta] jo heti, ja suunnan mihin lähtää. Se on ainakin kuulemani mukaan se tärkein palvelu.]

Oulunseutu Sports Academy coordinator

This view got support from the fact that the biggest percentage of the Sports Academy medical service usage occurred in KSSA, where the medical service is organized in a form of easy-access consultation hours. The KSSA interviewee gave her view on the issue:

It [the medical consultation] has started to work very well and probably what affects is that it is free of charge. You can go there without booking an appointment. We have strived to make it really easy so that there are no excuses why you could not go there. Or other reasons such as you don't have money to go.

[Se [lääkärikonsultaatio] on saatu tosi hyvin käyntiin ja varmaan siihen vaikuttaa se, että se on maksuton. Sinne voi mennä ilman ajanvarausta. Se on pyritty tekemään tosi helpoksi niin, että ei ole mitään tekosytä miksei sinne voisi mennä. Tai muita syitä kuten että ei ole rahaa.]

Keski-Suomi Sports Academy coordinator

Another factor when increasing the usage levels of the Sports Academy health care services in knowing the options athletes use instead of them. The results of the athlete questionnaire showed that more than 70% of the injuries/illnesses the athletes reported were treated somewhere else than in Sport Academy-delivered health care services. In addition, the second most important reason not to use Sports Academy services was using similar service provided by other service suppliers, for example sports clubs. This

study cannot reveal what are these other service providers. PHSA interviewee gave some views about potential reasons for using other than Sports Academy-run services:

Probably physiotherapy and massage are typical examples of the fact that some athletes already have a service provider through their own sport discipline, who has even stronger knowledge of a certain sport. Especially if the athlete has become our member a little bit older. That they have not come quite yet in high school age, when it is presumably to begin using these types of services.

[Varmaankin fysioterapia ja hieronta ovat sellaisia tyypillisiä esimerkkejä siitä, että jollain urheilijoilla on oman lajin kautta jo joku [palveluntarjoaja], jolla on vielä vahvempi se tietyt lajin osaaminen. Varsinkin jos urheilija on tullut meidän jäseneksi vasta vähän vanhempana. Että ei ole tullut ihan lukioikäisestä, jolloin oletettavasti vasta alkaa käyttää niitä sentyyppisiä palveluita.]

Päijät-Häme Sports Academy coordinator

Also the findings of the athlete questionnaire triggered a presumption that one potential reason to the low levels of Academy service usage might truly be the fact that some athletes, especially those representing team sports, have an access to well-functioning health care services through their own teams and sport clubs. Therefore one of the research interests was to find out whether there is a difference in the usage of the health care services between team sport and individual sport athletes. The athlete questionnaire did not produce any findings regarding this issue, but the interviewees were asked to give their views on it. OSA interviewee discussed the unequal positions of individual and team sport athletes in their Academy. His view was that successful teams usually have well organized health care services themselves, even though the situation depends quite a lot on the sport, and not all teams have organized the services at all. For individual sport athletes the services are anyhow more scattered. He also mentioned that it is probable that individual team sport athletes might be more in need of the Academy-run services.

It may be that, in individual sports they have never had any health services, and that they have been seeing some family doctors to treat these [sports related] things. And now when they become more involved with sport they find out that there are specialist's services available here.

[Voi olla, että heillä yksilöläjeilla ei ole ikinä ollut mitään terveyspalveluita, ja että siellä on käyty jossakin perhelääkärillä

hoitamassa niitä [urheiluun liittyviä] asioita. Että vasta nyt kun tulee enemmän urheiluun sisään, niin ensimmäistä kertaa tutustuu, että täällä olisi asiantuntijapalveluitakin tarjolla.]

Oulunseutu Sports Academy coordinator

On the other hand, the KSSA interviewee's view was that both kinds of athletes use the services equally if the services are available. PHSA interviewee stated that sometimes team sport athletes do not pay the Academy fee at all, if they see that the health care services are well organized in their own sport clubs. That is why PHSA has only a few team sport athletes in the gold level while the majority of them are representing individual sport athletes.

For many athletes the most important reason to apply to the gold level is exactly the support services. If they see that they have things figured out through their club they don't find it necessary to pay the annual fee.

[Monelle [urheilijalle] se tärkein syy siihen kultatasolle hakeutumiseen on ehkä juuri tuo tukipalvelut. Jos he katsovat, että heillä on seuran kautta ne asiat kunnossa niin sitten he eivät ole nähneet tarpeelliseksi maksaa sitä vuosimaksua.]

Päijät-Häme Sports Academy coordinator

To better understand the behavioral patterns behind the usage of the Sports Academy health care services, and to better promote them in the future, one of the research interests was to find out how and in what kind of situations Academy athletes end up using the services. The interviewees gave their views on the issue. PHSA coordinator estimated that the services are used when an injury/illness/problem occurs. Her view was that preventive health care approach has not yet got across than it ideally could have been. Also OSA interviewee said that the usage has been focused on treating "semi-acute" problems. In OSA, athletes' health checks and muscle balance tests are usually the first step to the services, and all athletes are "forced" to these check-ups, followed by more specific treatment in physiotherapy or in nutritional guidance, if it is needed. In contrary, KSSA coordinator emphasized the preventive approach to athletes' health care, when the actual appointments are not so much needed. In KSSA, easy access to medical services as well as the integration of physiotherapist's services into daily training session aims to bring health care closer to the athlete, and problems can be tackled before they occur.

In a way, we are moving from blocking the fires into prevention of the fires.

[Tavallaan ollaan siirtymässä tulipalojen sammuttamisesta tulipalojoen ehkäisemiseen.]

Keski-Suomi Sports Academy coordinator

5.2.2.2 Measures to promote service usage

Being aware of the existing services is essential for their usage. As the results of the athlete questionnaire showed, the biggest constraint for not using the Sports Academy services in general was lack of awareness. For 30% of the questionnaire respondents the most important reason inhibiting the service usage was not being aware of the services. Therefore there was strong interest to find out how the Academies inform their athletes about their service supplies, and promote the usage of these services.

Different kinds of information channels are used with a little variety between the examined Academies. In all three Academies, the services are presented personally to every athlete when they become a member of the Academy. Service supply is also presented in the academy websites, however in a varying manner. In PHSA and KSSA websites all the services are presented clearly whereas the OSA has not had a listing on their website, as the interviewee told the supply has been changing so much recently. He however mentioned that the website information will be improved in the near future. Both PHSA and KSSA are regularly sending all their athletes e-mail info letters which, among other things, consist of information and reminders also about the health care services. In OSA info letters are not used to a large extent.

All three interviewees were surprised with the part of the questionnaire results that revealed athletes' poor awareness concerning the Academy services. In general, the Academy workers view was that there is a lot of information work done, and that based on the amount of information, athletes should be more aware of the services. Even though the coordinators wondered athletes' unawareness, the questionnaire results seemingly helped Academies to realize that information procedures must anyhow be developed. OSA coordinator mentioned that while the amount face-to-face guidance is hard to increase, the clarity of the Academy web pages as well as the usage of other

electronic information channels should and will be improved. KSSA coordinator in turn brought up the problem with sending e-mails, as there is no way the sender can know whether the athletes actually receive and read the sent messages, even if the right addresses are asked at the beginning of every autumn season.

Poor information might be the most obvious factor behind athletes' lack of awareness concerning the Academy services. Interestingly, PHSA coordinator argued that when the information seems to be adequate enough, it might be the athletes' personal capability to adopt new information that affects the case:

There is a lot of information coming at once. If there are no health problems at that point, and everything is fine, the information does not necessarily stay in one's mind. -- Could it also be respondents' age somehow? Is it so that the young people are not used to take as much responsibility for themselves? If the athletes are less than 20-year-olds on average, and they have a lot of homework and they are busy, would shorter bulletins via social media get across more easily than e-mail newsletters, which someone does not necessarily bother to read? -- Then of course some of the athletes, who may be the most successful ones, are already so experienced that they have a different kind of motivation and responsibility for what they do, so they are aware of and use the services.

[Tietoa tulee paljon kerralla. Jos ei juuri silloin ole mitään terveydenhuollollista ongelmaa, ja kaikki on kunnossa, niin välttämättä tieto ei jää mieleen. -- Olisiko se jotenkin vastaajien ikäkin? Onko nuorilla niin, että ei ole tottunut ottamaan niin paljon vastuuta omasta itsestään? Jos urheilijat ovat keskimäärin alle parikymppisiä ja heillä on paljon läksyjä ja muuta kiirettä, niin meneekö paremmin perille lyhyemmät tietoiskut sosiaalisen median kautta kuin uutiskirjeet sähköpostissa, mitä joku ei välttämättä jaksa lukea? -- Sitten tietysti osa urheilijoista, jotka saattavat olla niitä menestyneimpia, on jo sen verran kokeneempia että niillä on erilainen motivaatio ja vastuu omasta tekemisestä, niin he ovat kyllä tietoisia ja käyttävät palveluita.]

Päijät-Häme Sports Academy coordinator

Young athletes' ability to manage their own health, sport careers and lives might be lower than the one of older and more experienced athletes. That is why the Academy coordinators' role in guiding athletes to use the Academy services is crucially important. The literature review discussed the concept of performance manager as a coordinative link between athletes and service providers. To gain an insight about the

guidance practices in the Academies, and about the Academy coordinator's managerial role, the issue was discussed with the interviewees.

All three coordinators told that they do not receive many phone calls or other inquiries from athletes asking help with the Academy services. OSA coordinator noted that parents might call instead of the young athletes themselves. PHSA coordinator mentioned that the athletes, who could potentially call and ask something about the services, are maybe those who are well-informed enough to check the Academy website first. All coordinators still stated that more direct requests would be welcome. The following statement of OSA coordinator summarizes how the performance manager approach might be beneficial in the Sports Academy settings:

Asking about the services is still a constraint to athletes. They should somehow have the information ready in the pocket. But I think that athletes are already faced way too little. It would be important that they were affiliated with one of our coaches who have the knowledge or the then coordinator, who knows all the stuff and how to guide them. The coordinator is also able to recognize the real need of the athlete, and tell what they should do. This way the use of the services can also be guided. So that the athlete is bold and really takes all the services he needs, and doesn't need to keep wondering. Somehow, they still might doubt if they can go. So maybe encouragement and guidance should be more pronounced.

[Urheilijat pitää edelleen kynnyksenä kysyä palveluista. Heillä pitäisi jotenkin olla taskussa valmiina se tieto. Mutta minun mielestäni urheilijoita kohdataan muutenkin aivan liian vähän. Olisi tärkeää, että he olisivat yhteydessä johonkin meidän valmentajiin, joilla se tieto on tai sitten koordinaattoriin, joka käytännössä osaa kaikkia juttuja ohjata. Koordinaattori myös pystyy tunnistamaan sen urheilijan oikean tarpeen ja kertoa mitä kannattaa tehdä. Sillä tavalla voi ohjata myös sitä palvelujen käyttöä. Että urheilija oikeasti ottaa rohkeammin ne palvelut mitä hän tarvitsee eikä jää miettimään. Jotenkin he ehkä vähän vieläkin epäilevät että voiko mennä. Että ehkä se kannustaminen ja ohjaaminen pitäisi olla voimakkaampaa.]

Oulunseutu Sports Academy coordinator

Interestingly, PHSA coordinator discussed the issues from an opposite perspective. First she brought up her perception that some athletes find it difficult to book appointments by themselves. She continued by wondered if things should be made for athletes or not:

I don't know if we are guiding the athletes to direction where they don't have to take any responsibility for their own career. I think that it should also be highlighted that it is their career.

[En tiedä ollaanko tässä ohjaamassa urheilijoita yhä enemmän siihen suuntaan, että heidän ei tarvitse itse ottaa yhtään vastuuta omasta urastaan. Mielestääni kuitenkin sitäkin täytyy korostaa että se on sen urheilijan oma ura.]

Päijät-Häme Sports Academy coordinator

5.2.3 Health care team building

The literature review discussed the importance of cooperation and communication between different actors involved in the athletes' health care. Team-thinking was suggested to increase the quality of the health care, but just a set of different service providers cannot be called as a team. To form an image about what level cooperation and communication between different health care services providers currently are at in examined Sports Academies, and to what extent team-thinking occurs, this issue was also discussed during the Academy interviews.

The coordinators did not have strong views about how the different health care service providers practically work as a team. The general view still was that the formation of the health care teams seems to be in a somewhat good level in all the Academies examined, even though the provision structures are not alike. PHSA coordinator brought up that the importance of cooperation has been understood better recently. Her view was that all the PHSA health care providers know each other, and can guide athletes from one place to another. PHSA has also organized meetings between different service providers and more has planned for the future. In OSA, almost all the service providers work under one organization, the sports medicine clinic, which provides better possibilities for team-building. However, the athletes treated are responsible for transmitting the information from one provider to another, which relates to the legal issues of patient security. From health checks and muscle balance tests OSA athletes can get a paper-form feedback, which can then be delivered for example to their coaches. In KSSA, all of the health care providers work physically close to each other, and to some extent consultations occur. The coordinator's view was that in KSSA the cooperation is continuously increasing.

The theoretical applications presented earlier also discussed about involving coaches into athletes' health care. The Sports Academy coaches often coach voluntarily in addition to their paid jobs, and cannot take wide responsibility for their athletes' health care among all other things. Even so, the interviewees brought up the important role of the coaches in a process applying to the Academy health care services. OSA coordinator discussed the issue by mentioning that some athletes ask help from their coaches when they are in a need of some kind of medical care. The following statement of PHSA coordinator strengthened the idea about the importance of the coaches:

My experience is that coaches have a really big role in how athletes use the services. If an athlete has some problems, the coach is usually the first person with whom the matter will be brought up, and in many cases it is the coach's word what matter the most for athletes. If the information to coaches' direction would be improved, then certainly it could improve the use of the services.

[Oma kokemukseni on, että valmentajilla on tosi iso rooli siinä, miten urheilijat käyttävät palveluita. Jos urheilijalle tulee jotain [ongelmia], niin valmentaja on yleensä se ensimmäinen henkilö, jenken kanssa asia otetaan esille, ja monesti urheilijoille valmentajan sana on se mikä eniten painaa. Jos tiedotusta valmentajien suuntaan edelleen teräväöittäisi, niin varmasti se saattaisi parantaa palvelujen käyttöä.]

Päijät-Häme Sports Academy coordinator

Coach-integration was also examined by asking about how information concerning the Sports Academy health care services is reaching the coaches. In PHSA, coaches' role seems to be well recognized, and measures to integrate coaches into athletes' health care have been made. For example, PHSA has organized evenings with a health care professional lecturing to coaches. In both PHSA and KSSA, the aim is to make all coaches aware of the health care service their athletes are entitled to, and different channels are used to deliver the information. OSA in turn does not currently target information separately to coaches, but the interviewee noted that this might be one target of development in the future. All interviewees mentioned that, just like the athletes, the coaches are not aware enough about the existing services. PHSA coordinator stated that might be hard for coaches to know what service providers they athletes should use, if their sports clubs and sponsors are also offering the some services. She also brought up that the management of these issues could be developed somehow, but the Academy coordinators might not have enough time to do it.

5.3 Future development of the Sports Academy health care services

To provide suggestions for how the Sports Academy health care services could be developed in the future, in other words to answer the research question 3, comments of both athletes and Academy coordinators were observed. Athletes gave feedback in the athlete questionnaire. Sports Academy coordinators' wishes were discussed during the three Academy interviews.

5.3.1 Athletes' feedback

Athletes from 19 Academies gave answers to the open question, giving personal comments and suggestions for development concerning the Academies, their functions and services. The results included 598 answers altogether. Remarkably the biggest theme encompassed the information of the Sports Academy services in general. 130 answers were specifically related to Sports Academy health care services or athletes' health in general. These answers included comments on all five categories of the Sports Academy health care services, but also on other topics (table 11). Due to the question design, most of the answers concentrated on pointing out the issues in need of improvement or giving suggestions and ideas for future development, while only a few comments highlighted the issues the respondents have been pleased with.

TABLE 11. Topics of the athletes' comments concerning the Sports Academy health care services

Topics mentioned in the comments	Number of comments
Massage service / muscle maintenance	33
Physiotherapy, muscle balance tests / injury prevention	33
Sport psychology / mental coaching	33
Medical services	26
Nutrition guidance services / athletes' nutrition	17
Prices of the Sports Academy health care services	11
Poor information, guidance and awareness concerning the Sports Academy health care services	23
Other topics	4
Total number of comments	130

Some athletes discussed the importance of quick help for health problems and their significance also from psychological point-of-view.

Primarily injured athletes should be guided straight to the services. Now an injured one might be lost for a long time before finding treatment. Usually injured athletes are in the bad mood, they are angry and crying etc., but strong short-term help can facilitate the athlete and their career in many ways.

[Ensisijaisesti loukkaantuneiden urheilijoiden tulisi saada palveluihin suora opastus. Nyt loukkaantunut voi olla pitkiäkin aikoa hakoteillä ennen kun löytää hoitoa. Yleensä loukkaantuneet urheilijat ovat pahalla päällä ja vihaisia ja itkeväät yms., mutta tällöin lyhytkestoinen voimakas apu voi helpottaa suurella tapaa urheilijaa ja urheilijan uraa.]

National level athlete

Some kind of check-ups could be organized for the athletes. If you are travelling and practicing a lot, monitoring one's physical and mental health every now and then would be quite good. Doing so many burn-outs could be avoided, as well as overtraining and even injuries.

[Voisi järjestää tietynlaisia check-up -tilaisuuksia urheilijalle. Jos matkustaa ja treenaa paljon niin fyysisen ja henkisen terveyden tarkistaminen silloin tällöin olisi aika hyvä. Siten voitaisiin välttää monia burnouteja ja ylikuntoa ja kenties jopa loukkaantumisia.]

National level athlete

Physiotherapy and medical services should be easier. Now everything is hard to reach and an athlete is left alone to look for help. I would survey the sport injury prevention a lot! Coaches are coaching and athletes are doing sports but when your health is changing or you get an injury, you are unaware.

[Fysioterapiapalvelut ja lääkäripalvelut helpommiksi. Nyt kaikki on kiven takana ja urheilija jää yksin hakemaan apua. Urheiluvammojen ennaltaehkäisyä kartoittaisin suuresti! Valmentajat valmentavat, urheilijat urheilevat, mutta kun terveydentila heittelee tai tulee vamma, niin iskee tietämättömyys.]

Youth's national team athlete

Some athletes criticized the poor availability of the services for those who have not reached a certain athletic level or status. The following comments points out how problematic this can be from health perspective.

The service should be directed to all athletes in different levels. As far as I know, some of these services are only for athletes in national team level, and the most of them are not even using them. Those who are aiming high and who have problems for example with injuries, need especially the services offered by the Academies because they are lacking support from somewhere else, for example from the national team.

[Palvelut tulisi suunnata kaiken tasoisille akatemian jäsenille. Jotkin näistä palveluista koskevat tietääkseni vain maajoukkuetason urheilijoita ja suurin osa heistäkään ei käytä niitä. Ne, jotka ovat tähtäämässä huipulle ja joilla on vaikeuksia esimeriksi vammojen takia, kaipaavat nimenomaan akatemian palveluja muiden, esimeriksi maajoukkueen, tuen puuttuessa.]

Youth´s national team athlete

I do understand the resources. Top athletes have better possibilities to have services, I can understand that. But it would be good to have, for example, medical services utilized better for the other Academy members as well, so that they could get help as quickly as possible from good sports doctors. Academy could serve as a helper at least when they want to see a proper doctor. So that it could be possibly to go in a few days, and you don´t have to wait that for 2-4 weeks when it´s already too late.

[Ymmärrän resurssit. Kärkiurheilijoilla on mahdollisuus palveluihin muita paremmin, ymmärrän sen. Olisi kuitenkin hyvä saada esimeriksi lääkäripalveluita hyödynnettyä muillekin akatemialaisille paremmin, että voisi saada vammoihin apua mahdollisimman nopeasti hyviltä urheilulääkäreiltä. Akademia voisi toimia edes auttajana silloin kun kunnon lääkärille halutaan niin, että voisi mahdollisesti päästä lääkärille muutamassa päivässä, ettei tarvitsisi odottaa 2-4 viikkoa jolloin ollaan jo myöhässä.]

National level athlete

Organization models of the health care services as well as scarce service provisions were criticized. Only delivering contact information of different health care service providers was not seen to serve the athletes the best way possible. The comments also showed that better information concerning the offered service is needed.

The sport psychologist´s services and nutritional guidance services are outsourced. Practically Academy is distributing contact information. The services are priced by the service producers.

[Urheilupsykologin ja ravitsemusneuvonnan palvelut ovat ulkoistettuja. Käytännössä siis akademia jakaa yhteystietoja. Palvelut menevät palveluntarjoajan oman hinnaston mukaan.]

Adults' international level athlete

For example, I have missed a lot mental training and help with nutritional issues but it is hard to find information about that, so I have ended up using private service provider.

[Esimerkiksi henkistä valmennusta ja apua ravitsemisasioissa olen kaivannut kovasti, mutta siitä on vaikea löytää tietoa, joten olen päättynyt käyttämään yksityisten palveluja.]

National level athlete

Some athletes pointed out the problem with overlapping services. Also better cooperation with health care students was brought up.

Massage is important for an athlete. The massage services offered by the Sports Academy are quite expensive even with the discount, and I can get the service with a lower price through my sport club. Would it be possible to cooperate with masseur students to get the prices at lower level?

[Hieronta on urheilijalle tärkeää. Urheiluakatemian tarjoamat hierontapalvelut ovat alennuksen jälkeenkin melko hintavia, saan seurani kautta palvelut halvemmalla. Olisiko mahdollista tehdä enemmän yhteistyötä hienojaopiskelijoiden kanssa, jolloin hintaa saataisiin alemmas?]

National level athlete

Personally I have needed a lot health care services during the recent years. If possible, I think that the Academy should have a few own doctors from the special areas athletes need the most, so that you could go to them without queuing and/or got some discount e.g. for the office fees. Partly this is in use but in practice you have to queue to doctor's even over a week, what is too much when you have a sport injury. Earlier there was an intern who you could see with lower price "just in case", which at least in my case lower the threshold to go and check and get some pain killers for "little injuries". If we could have this system back it would be really good.

[Henkilökohtaisesti olen tarvinnut viime vuosina melko paljon terveyspalveluja. Jos mahdollista, niin akatemiaalle olisi mielestääni hyvä hankkia muutama sopimuslääkäri yleisimmin urheilijoiden tarvitsemilta erityisaloilta siten, että näille lääkäreille pääsisi jotenkin jonon ohi ja/tai saisi alennusta esim. toimistomaksuista. Osittain tämä on jo käytössä, mutta käytännössä erikoislääkärille voi joutua jonottamaan jopa yli viikon, mikä urheiluvamman kohdalla on liian pitkään. Aiemmin oli myös yksi erikoistuva lääkäri, jolle pääsi melko halvalla hinnalla käymään "varmuuden vuoksi", mikä laski ainakin itsellä suuresti kynnystä käydä tarkistuttamassa ja hakemassa tulehduskipulääkkeitä "pikkuvammoihin". Jos tämän käytännön saisi takaisin, se olisi todella hyvä.]

National level athlete

As mentioned earlier in this paper, integrated approach to athletes' health care is a new and complex concept for athletes and their support groups. Only a few respondents brought up the issue.

Cooperation between the professionals in their own fields, such as coaches, physiotherapists and dieticians, should be improved so that athlete can get a plan where all parts are taken into account.

[Omien alojensa ammattilaisten kuten valmentajien, fysioterapeuttien ja ravitsemusterapeuttien yhteistyötä pitäisi parantaa ja näin saada urheilijalle suunnitelma, jossa otetaan kaikki osa-alueet huomioon.]

National level athlete

Some comments showed frustration on the whole Sport Academy system, which tells athletes have not been pleased with the program.

Academy should not be an afternoon club that provides social life and weight management counseling for athletes ending their career but rather a system that develops Finnish top-level sport!

[Akatemian ei tule olla iltapäiväkerho, joka tarjoaa jäähdysttelijöille sosiaalista elämää ja painonhallintaohjeita, vaan suomalaista huippuurheilua kehittävä järjestelmä!]

Adults' national team athlete

5.3.2 Academy coordinators' comments

The questionnaire results showed how the Academy athletes perceive the quality of the Sports Academy health care services. PHSA and OSA have not collected feedback from athletes to measure the levels of satisfaction, while in KSSA feedback has been collected every other year. Interviewees' personal view still was that in general the athletes have been pleased with the services. One suggestion also was that the athlete questionnaire could be exploitable for Academies to conduct their own evaluations, so that the Academies could be more aware of what their athletes think.

PHSA coordinator mentioned that sometimes athletes have hoped for more options to service providers. She mentioned especially mental coaching, where personal chemistries with the psychologist have a big role, and more options to choose would

therefore be good. Also in physiotherapy services some athletes have hoped more professionals to choose from. OSA interviewee in turn brought up a possibility to expand the service supply, and to include new manual therapy professionals, such as chiropractors into the service providers' network.

OSA coordinator mentioned that athletes have given feedback on the fact that some issues like medical imaging cannot be covered by the Academy. All the special needs cannot be treated through the Academy-offered services which might cause disappointments for athletes. However he mentioned that in their Academy, for example all kinds of laboratory test have been done, which hasn't been the case in two other Academies. In KSSA, the low-threshold medical service has received positive feedback due to its free and easy access. Even though the service is more consultative than treating, the athletes have perceived it very positively. Also the athletes who have had physiotherapy integrated into their practices have been very pleased with the procedure, as well as their coaches.

PHSA and KSSA interviewees stated that the aim is to offer all health care services free of charge, but this would require remarkably more resources. However in OSA all the services are free, no athlete fees are collected, and the costs have been managed to cover with outside funding.

PHSA coordinator mentioned that the up-down instruction from Olympic committee could be more uniform and concrete which would make the operations more alike and clear. She pointed out the all the Academies should be "in the same boat". She mentioned that the action proposals have become quite concrete already, but they should still be even more concrete and practical. A concrete example from her was that some kind of common qualification requirements for the Sports Academy health care providers should be developed. In her opinion, service providers offering for example nutritional guidance might be educated in a different manner, and to equalize the quality of the Academy services, some guidelines for their professional background would be beneficial.

All three interviewees highlighted that the preventive approach to athletes' health care could be developed further, which has also been one of the key suggestion of the

Olympic Committee. Also better integration of the health care services with daily training was discussed. The following statement of KSSA interviewee summarizes well these comments:

Concerning every service the aim is that the specialists work in athletes' everyday life. It does not matter whether it is a psychologist or dietician, but it is not just some reception but they are in the sports hall and in practice. Of course, in psychology the processes are a bit different and [the psychologists] do not necessarily work at the pole vault mattress, but so that they are on the skin of the athlete and that the actions are happening in the everyday life.

[Kaikissa näissä palveluissa tavoite on se, että se asiantuntija toimii urheilijan arjessa. Ihan sama onko se psykologi vai ravitsemusterapeutti, mutta se ei ole mikään vastaanottoaika vaan että se on siellä hallissa ja treenissä mukana. Tietenkin psykologissa on vähän erilaisia ne prosessit ja he eivät välittämättä ole siellä seiväshyppypatjalla, mutta silleen että se on siellä urheilija iholla ja siellä arjessa tapahtuvaa tekemistä.]

Keski-Suomi Sports Academy coordinator

5.4 Summary

The results of the athlete questionnaire showed that over the half of the Sports Academy athletes had suffered from an injury or an illness that required medical care. The results also suggested that there is a connection between the amount of weekly practice hours and injury incidence. Also athletes competing in higher level are more likely to suffer from an injury or illness. Due to the low response rate no watertight conclusions can be made. These results are still in line with other studies about the prevalence of athletic injuries, and strengthen that there is a need for specific health care services for athletes who aim high.

Approximately half of the questionnaire respondents had used the health care services offered by the Sports Academies. Only 13% of Academy athletes injuries were treated through Sports Academy health care services during the past year, while 73% had been treated somewhere else. These numbers are somewhat contradictory. A conclusion can be drawn: currently the Sports Academy health care services seem to be used in cases of

overall health maintenance, but in a case of more serious injury or long-term conditions, treatment is sought from somewhere else. In general the level of service usage could be improved.

The organization of the health care services in the three different Sports Academies, Päijät-Häme, Oulunseutu and Keski-Suomi, appeared to be somewhat different from each other. While OSA services present the "one-stop-shop" approach, does PHSA and KSSA provide their services more with a cross-referral-like system. Remarkable differences in the price levels of the services also occur between the examined Academies. OSA offers all the basic health care service totally free of charge, while the majority of both PHSA and KSSA athletes need to pay for the services. The latter Academies however cooperate with local physiotherapy education institutions, which in some cases has offered a possibility to reduce the costs of physiotherapy services. Developing this kind of collaboration with health care students could be encouraged more to lower the service price levels.

In general level there was no clear evidence that the organizational factors have affected the levels of usage and athletes' perceived satisfaction with the services. However the low-threshold access to doctor's consultation KSSA provides has caused seemingly higher amount of athletes who had treated their occurred injuries/illnesses through the Sports Academy health care services, when comparing to all other Academies. On the other hand, Academy interviews revealed that some athletes might have troubles with booking appointments with health care professionals. Easy-access medical services with no booking required might increase the level of medical service usage, and facilitate Academy athletes' access to preventive health care. Therefore a medical consultation service like in KSSA could be seen as a recommendable way to organize Sports Academies' medical services.

Another big difference between the three Academies appeared in the approach to athletes' health checks and muscle balance tests. While PHSA and OSA systematically offer these check-ups for their athletes and encourage them to use them, the single checks are not seen so important in KSSA, where physiotherapy services are integrated in daily training activities. It is not possible to state if these differences have had any

effects on athletes' health in different Academies, and this study cannot take a stand on the utility of these check-up services.

The fact that Academies are not systematically collecting information about how much their athletes use the health care services was surprising. Monitoring the levels of use is essential when thinking about the development of any kind of service. Collecting the information from monthly bills would provide Academies better understanding about how their services are used, and the information could be comparable nationally. Comparison between the levels of use of specific services would provide useful information for the Sports Academy program, and also shed light on the question whether the different organization procedures have an effect on the usage of the services.

The most important reason for not to use the Sports Academy services in general was that the athletes are not aware of the services. Due to the question formatting of the athlete questionnaire, the results could not reveal service-specific reasons, but they can still indicate the factors related also to the health care service usage. In addition, interviewees discussed about the Academy athletes' young age and potential inability to adopt new information. Based on these findings, Academies' communication strategies are suggested to be developed in the future. Having all the relevant information available for example in the Academy websites might help athletes, especially the younger ones, to be more aware of the existing services. Comprehensive descriptions about different service categories should also be shown, as well as the price lists, access information and other practical information.

In summary it can be stated that the organizational structures as well administrative practice of athletes' health care services in the Finnish Sports Academies follow the theoretical framework and suggestions for athletes' health care management. The challenges of the management also appeared same as the literature suggests. However, in practical level the targets set for the Sports Academy health care services are not currently met to a large extent, and much of developmental work must be done to meet these targets in the near future. Table 12 aims to summarize the result-based practical level suggestions about how the Sports Academy health care services could be developed in order to support the Academy athletes better.

TABLE 12. Summary of suggestions for development of the Sports Academy health care services

Organization level	Suggested measure
Olympic Committee High Performance Unit / Sports Academy Program	<ol style="list-style-type: none"> 1. Set an aim to equalize health care service prize levels in different Academies 2. Conduct annual evaluations to monitor the usage and satisfaction with the Sports Academy health care services 3. Create requirements for health care service providers qualification to equalize service quality
Sports Academies	<ol style="list-style-type: none"> 1. Monitoring the levels of service usage 2. Creating low-threshold access to medical services, preferably free of charge 3. Increasing collaboration with local education institutions (e.g. physiotherapy schools) to lower the service price levels 4. Increasing athletes' awareness about the existing services by paying attention to communication 5. Creating clear websites with all information regarding the health care services 6. Increasing coaches' role in athletes' health care by organizing events with coaches and health care providers, and creating communication strategies targeted to coaches 7. Increasing cooperation between the health care service providers by organizing regular meetings 8. Aiming to increase integration of the health care with daily training

6 DISCUSSION

Sports Academy activities are determined nationwide by the Finnish Olympic Committee and its Sports Academy Program. As far as the certain requirements are fulfilled, the Academies have freedom to organize their services as they wish. Due to this, athletes living in different regions are currently facing unequal circumstances and support. This study revealed that, concerning the athletes' health care services, there are somewhat big differences in organizational structures as well as price levels only between the three Sports Academies examined. Athletes in higher performance level are receiving better service in all of the three Academies. Athletes in higher levels also seem to be more prone to health concerns. Feedback collected from Academy athletes however raised up the fact that athletes in lower levels might suffer from the lack of low-cost health services, which might reduce their possibilities to develop their performance level further. If the funding for Sports Academy health care services will grow in the near future, there is a need to consider how the resources will be targeted. Is the aim to offer all-inclusive services for the most promising and the best succeeding athletes? Or would it be more beneficial to include also the lower-level athletes in the scope of professional support, to widen the basis of the Finnish elite sport even more? The situation today in the Finnish Sports Academies includes both approaches.

One of the main reasons for not using the Sports Academy services was found out to be that the athletes are using services offered by some other providers. The athlete questionnaire did not reveal the reasons specifically for health care services, but an assumption was that the reasons are valid also concerning these services. In order to develop the Sports Academy-delivered health care services, it would be useful to know what these other parties are. Who are the "competitors"? How the Academy services must be improved to make them a viable option for the athletes who are not currently using them? While the facts are lacking, some guesswork can still be made. In Finland, the university students are within the scope of well-functioning student health care services. Finnish Student Health Services FSHS offer low-cost medical treatment, health counseling as well as physiotherapy services. FSHS services are not specific to sport-related health problems, but can provide a viable option for basic health care. Athletes studying in the universities might find these services more practical for them.

This study aimed to provide an overall picture about the current state of the Sports Academy health care services, and to point out the targets of its development. Individual athletes' experiences with the services however remained in the dark. It would be interesting to examine individual athletes' paths in the health care jungle.

The results of this study only touched on the issues of different funding models of the Finnish Sports Academies. However there were references which suggest the differences in these models seems to have an effect on the way athletes' health care service are organized and priced. Studies examining this topic would provide more proof to support decision making in the Sports Academy Program level.

As Brown (2005) has stated, "serious athletes come in two varieties: those who have been injured, and those who have not been injured yet." This line forms the future also for the Sports Academy health care services. Lack of the preventive approach to athletes' health care might form a remarkable constraint to the rise of Finnish elite sport.

Aspiring athletes need to be encouraged to exploit the preventive health care measures, and the sport system must create facilities for appropriate care provision. Providing well-functioning, high-quality health care services for aspiring Finnish athletes is an ambitious aim. Setting targets and visions is a good start. However, concrete decisions and actions are needed to truly develop the system. Starting from equalizing procedures and funding in different Academies forms a basis for future development and upgrading of the level of the Academies. Sports Academy services must bring true benefit for all Sports Academy athletes.

Evaluation of the research process

In this paper, I was able to combine the knowledge gained in my master studies in sport management and health promotion with my existing professional competence in physiotherapy. The thesis process carried me through multidisciplinary approach, as the topic consisted of perspectives of sport and health management, sport sociology, health sciences as well as sport psychology. My background helped me to position myself between these different fields, and the process definitely developed my knowledge and thinking in all of them.

The athlete questionnaire was prepared by the Research Institute for Olympic Sport KIHU, and was designed to meet the needs of the Sports Academy evaluation process. I couldn't much influence the questionnaire design, and all relevant information concerning specifically the Sports Academy health care services were not included in the data. However the data served well also the purposes of this thesis level study. In order to get more accurate information about the Sports Academy health care services, evaluation's question formatting must be improved in future questionnaires.

Due to the mixing research method approach, the thesis process required analysis of two different kinds of data. This was exhausting and time-consuming, and sometimes felt a bit too much for one person to handle. However, without including all these parts into the study, some essential information would have left missing, and the study would not have been able to provide all the information sought. Still, deeper analysis of each data could have been possible if the research had been delimited only to either service users' or organizers' perspective. The mixed method approach also provided some troubles with how to present the results. Integrating the findings of both qualitative and quantitative data in a clear and reader-friendly structure was the most challenging and consuming part the thesis process. Immersing in the analysis and theme-setting was time-consuming, but I am pleased with how the results can reveal the most important themes.

Considering the complex essence of athletes' support groups, Sports Academy health care services and especially the whole Finnish elite sport system, this master's level paper is only a drop in the ocean. Even though the research aims of the study were mainly met in a satisfactory manner, it is hard to evaluate what kind of concrete value the results will have in contribution to the development of the Sports Academy Program.

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APPENDICES

APPENDIX 1

Athlete questionnaire

Questions utilized in this study (translated from the original questionnaire)

- 1.** Gender
- 2.** Age
- 3.** What is your current place of studies?
- 4.** Which Sports Academy are you a member of?
- 5.** What is your sport discipline?
- 6.** In which level you compete in your sport at the moment?
- 7.** On average, how many hours a week you practice?

- 8.** During the past 12 months, have you suffered from an injury or illness that required medical treatment?

- 9.** If you have suffered from an injury or illness that required medical treatment during the past 12 months, how many times have you visited a doctor during this period of time?

- 10.** Was your injury/illness (last 12 months) treated through the health care services coordinated by your Sports Academy?

- 11.** Evaluate the quality of the Sports Academy services you have used during the past 12 months:
 - a.** Mental coaching
 - b.** Medical services when ill or injured
 - c.** Other medical services (e.g. preventive services, health check)
 - d.** Physiotherapy services in rehabilitation
 - e.** Preventive physiotherapy services(e.g. muscle balance test)
 - f.** Massage services
 - g.** Nutritional guidance services

- 12.** Which factors prevent you from utilizing the Sports Academy services? Set max. 3 the reasons in order of importance
 - a.** I use services provided by others (e.g. my sport club)
 - b.** I am not aware of the services
 - c.** Services are too expensive
 - d.** Services have not been offered to me
 - e.** Services are too far
 - f.** Quality of the services is poor
 - g.** Other reason

- 16.** Have you had athlete´s health check?

- 17.** Have you had a muscle balance test?

- 18.** By answering the following statements, evaluate the current state of your health care:
- a. Issues concerning strain and recovery are well taken into account in my coaching
 - b. I use muscle maintenance services regularly
 - c. I have a personal doctor who takes care of my overall health care
 - d. Relevant information flows well between coaches and the health care services
 - e. My personal doctor is involved in my coaching team
 - f. Physiotherapists is involved in my coaching team
- 17.** How well does the Sports Academy medical service work? Evaluate the following statements concerning the treatment of your injury/illness
- a. I was able to go to the reception less than 24 hours from my first contact
 - b. I got a correct diagnosis on time
 - c. I was quickly guided to examinations that were needed
 - d. Instructions for treatment and rehabilitation were clear
 - e. I could easily contact my health care personnel if needed
 - f. Relevant information concerning my condition and treatment reaches all different stakeholders (doctor, physiotherapist, coach etc.)
 - g. I had a follow-up/control meeting
 - h. Costs of treatment were reasonable
- 18.** How do you think the Sports Academy service should be developed in order to support you better?

APPENDIX 2

Questions of the Academy interviews

Palveluiden järjestäminen (*Organization of the services*)

1. Miten urheilijan terveyspalvelut ovat akatemiasanne järjestetty ja mitä niihin sisältyy?
(How are the athletes' health care services organized in your Academy and what they consist of?)
2. Miten sopimukset terveyspalveluiden tuottajien kanssa syntyvät/ovat syntyneet? Kuinka paljon tuottajissa on vaihtuvuutta?
(How the contracts between health care service providers have formed? How much have the providers changed?)

Palveluiden saavutettavuus ja niistä tiedottaminen (*Availability of the services and information*)

3. Miten akatemia tiedottaa urheilijoita terveyspalveluista ja ohjaaa urheilijoita palveluiden pariin?
(How does the Academy inform the athletes about the health care services and guide them to use the services?)
4. Kuinka hyvin urheilijat ovat oman näkemyksenne mukaan tietoisia terveyspalveluista ja niiden sisällöstä? Entä valmentajat ja muut urheilijan tukiryhmät?
(Based on your own perception, how well are the athletes aware of the health care services and their contents? What about coaches and other groups supporting athletes?)
5. Kuinka riittävää terveyspalveluista tiedottaminen ja niihin ohjaaminen mielestänne on?
(Based on your own opinion, how adequate are the information and guidance procedures concerning the health care services?)

Palveluiden käyttö (*Usage of the services*)

6. Missä määrin akatemianne urheilijat oman näkemyksenne mukaan käyttävät terveyspalveluita?
(Based on your own perception, to what extent do the athletes in your Academy use the health care services?)

7. Mikä on yksittäisen urheilijan tyypillinen polku akatemian terveyspalveluihin?
(What is a typical path of an individual athlete to use the Sports Academy health care services?)

8. Millaisissa tilanteissa urheilijat käyttävät Akatemian terveyspalveluita?
(In what kind of situations do the athletes use the Academy health care services?)

Palveluiden kehittäminen (*Development of the services*)

9. Kuinka tyytyväisiä urheilijat oman näkemyksenne mukaan ovat akatemianne terveyspalveluihin ja miten ne vastaavat urheilijoiden tarpeita?
(Based on your own perception, how satisfied are the athletes with the health care services organized by your Academy, and how well do they meet athletes' needs?)

10. Miten olette akatemianne sisällä keränneet/saaneet palautetta terveyspalveluista ja niiden toimivuudesta?
(In your Academy, how have you collected/received feedback concerning the health care services and their functionality?)

11. Miten terveyspalveluihin ja niiden tarjontaan on tehty muutoksia urheilijoilta/valmentajilta saadun palautteen perusteella?
(How changes have been made to the health care services and the service provision due to the feedback from athletes/coaches?)

12. Miten akatemian terveyspalveluita pitäisi mielestänne kehittää?
(In your own opinion, how should the Academy health care services be developed?)