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ATTITUDES OF PHYSIOTHERAPY STUDENTS TOWARDS
PEOPLE WITH DISABILITIES:
THE EFFECTS OF THE CURRICULUM OF THE SATAKUNTA
UNIVERSITY OF APPLIED SCIENCE

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The attitude of health care professionals toward people with disabilities has been an important area of research in the last decades. In fact, people with disabilities address the negative attitudes of the professionals, as being one of the main barriers to a successful delivery of healthcare services. Students are the future professionals, and it is luckily that the values and the professional skills that they will gain during their education, will potentially affect their working life, both in their knowledge and in their attitudes. It is therefore necessary to evaluate the impact and the quality that those study's programs have on the students' attitudes. Satakunta University of Applied Sciences (SAMK) has been recognized as a regional promoter of physical activity for the population with disabilities. It is known for its unique study program in Physiotherapy, which give the students plenty of opportunities to closely interact with people with disabilities, together with theoretical and practical courses in adapted physical activities, functional devices, and accessibility.

The purpose of this study-based Bachelor's Thesis was to explore the extent to which, the curriculum in Physiotherapy at SAMK, can ultimately result in an improvement of the students' attitudes towards people with disabilities. The author strongly believes in the need of investigating more on the factors that can affect positively on the attitudes of the students of SAMK, whose results can potentially serve as guidelines that could be implemented in the curriculum of the health care related degree programs in other Universities, in order to foster positive attitudes on a larger scale.

The research was conducted using both quantitative and qualitative research methodological approaches. An online questionnaire to the physiotherapy students at SAMK was administered by the author, who gained quantitative data that were analyzed statistically to measure the impact of studying in SAMK on the students. In addition, the questionnaire included the Attitude Towards Disabled People scale (ATDP), which was used to measure the attitudes of the students. Qualitative data were collected by performing individual interviews to post graduate students.

As the results showed, studying physiotherapy in SAMK does facilitate the improvement of the students' attitudes towards people with disabilities. The main contributing factors for those changes were identified in the courses and activities that involved a close interaction with people with disabilities, in the adequate knowledge about functional devices, accessibility and adapted physical activity, and in the positive attitudes of the teachers themselves.

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1 INTRODUCTION

“The wing structure of the hornet, in relation to its weight, is not suitable for flight, but he does not know this, and flies anyway.” - Albert Einstein

According to the Convention on the rights of persons with disabilities, “persons with disabilities have the right to the highest attainable standard of health without discrimination on the basis of disability. They are to receive the same range, quality and standard of free or affordable health services as provided other persons, receive those health services needed because of their disabilities, and not to be discriminated against in the provision of health insurance (Article 25)” (Website of UN. 2006).

Compared to the general population, there may be many social and environmental barriers that people with disability have to face in their everyday life. (Dinan & Messent.1997) Accessing to a successful delivery of health care services is certainly one aspect of a daily living which can include many barriers, but among all, people with disabilities often identify the biggest one in the negative attitude towards them held by health care professionals, which often include negative behaviours (Carter & Markham. 2001). A negative attitude from a healthcare professional can potentially have consequences on a person with disabilities, such as decreased self-esteem, pessimism and a feeling of hopelessness (Tervo, Palmer, & Redinius. 2004). Such attitudes can also directly affect the wellbeing of those patients (Link, Struening, Rahav, Phelan & Nuttbrock. 1997). It is luckily that the experiences and beliefs that the students will form during the years of study, will potentially affect their behaviour in their future working life. Therefore it is important to investigate what is the quality of those beliefs that the students have towards people with disabilities, before they will actually start their working life with these individuals. Investigating the attitude of the students, the effects that their education have on it, and what can determine an improvement on those attitudes, may promote the fostering of positive attitudes on these future professionals (Boyle, Williams, Brown, Molloy, McKenna, Molloy, & Lewis. 2010).

The conference performed by Aimee Mullins on TED (“The opportunity of adversity”) was chosen to be a more effective explanation of the impact that positive and negative attitudes can potentially have on a person with a disability.

Aimee Mullins is “an American athlete, actress, and fashion model who first became famous for her athletic accomplishments. She was born with a medical condition that resulted in the amputation of both of her lower legs and has become one of the most prominent thinkers on the topic of prosthetic innovation” (Wikipedia, 2010).

In her conference, Aimee Mullins describes the impact that her doctor had on her routine physiotherapy sessions to strengthen her legs’ muscles at the age of 5. The doctor stated that she was a powerful and strong little girl, and challenged her to break the elastic band she had to use for exercise, promising to reward her with 100 US dollars. Granted, it was just a play on the doctor’s part, in order to motivate her to perform the exercises. By doing so, her Doctor “reshaped an awful daily occurrence into a new and promising experience”. During her conference Aimee states: “I have to wonder today to what extent his vision and his declaration of me as a strong and powerful little girl shaped my own view of myself as an inherently strong, powerful and athletic person well into the future”(Mullins. 2009).

From the example of the interaction with her doctor during the rehabilitation session, Aimee’s shows how the attitude and the beliefs of a healthcare professional, have the potential power to affect the attitudes and believes of the patient. As the doctors affected Aimee’s, a physiotherapist can potentially affect the rehabilitee’s. Whether the rehabilitee will be affected in a positive or negative way, will depend entirely on the meanings behind the physiotherapist’s believes, which will therefore result into the quality of the attitude.

It is hypothesized that the believes that the physiotherapists have on the quality of life that a patient could aim to have, despite a disability, can ultimately be limiting or encouraging in the way the rehabilitee will perceive the opportunity of conducting a high quality of life. The risk could be that, if the physiotherapist holds a negative attitude towards people with disabilities, and has a negative perception of disability itself, this may result in a more negative prognosis of the quality of life of those rehabilitees with a disability. In fact, referring to this matter, Aimee states that “by giving a prognosis about the expected quality of their life, we have to make sure that we don’t put the first brick in a wall that will actually disable someone. Perhaps the

existing model of only looking at what is broken in you and how do we fix it, serves to be more disabling to the individual than the pathology itself. By not treating the wholeness of a person, by not acknowledging their potency, we are creating another ill on top of whatever natural struggle they might have. We are effectively grading someone's worth to our community"(Mullins. 2009). Therefore it is vital that the physiotherapy students will have to learn that the quality of the prognosis given to the patient, can potentially influence the quality of life of the rehabilitee. If a physiotherapist is aware of different kind of functional devices, adapted physical activities, and has a background knowledge in accessibility, then he/she can potentially guide the rehabilitee in reshaping his/her idea of his/her own disability into a more positive one, showing solution and adaptations to meet their needs, and still be able to maintain a good quality of life, as anyone else.

"We need to see through the pathology and into the range of human capability. And, most importantly, there is a partnership between those perceived deficiencies and our greatest creative ability...(It's about) to find those opportunities in the adversity."

No prognosis can account for how powerful (the human will is) as a determinant in the quality of someone's life" (Mullins, A. 2009).

In her qualitative study on "Physiotherapists Construction of their Role in Patient Education", Lynne Caladine (2013) states that the physiotherapists considered the "patient education as an integral and extensive component of their role as a physiotherapist, which extended beyond patients to include carers, other health professionals and support workers". Therefore the role of the physiotherapist in educating the patient is an important component, and it is crucial that the physiotherapy students realize the magnitude of the influence that they can have on the rehabilitees, as well as on their families and care givers.

In fact, while questioning herself on the reason that had made her shift her perception toward her condition, Aimee Mullins stated that it's "because I've been exposed to more people who have opened doors for me, than those who have put lids and cast shadows on me. See, all you really need is one person to show you the epiphany of your own power, and you're off. If you can hand somebody the key to their own power, if you can do that and open a door for someone at a crucial moment, you are educating them. You are teaching them to open doors for themselves. In fact, the exact meaning of the word 'educate' comes from the root word 'educer', it means 'to bring forth what

is within', to bring out potential. So again, what potential do we want to bring out? ” (Mullins. 2009).

2 HEALTH CARE PROFESSIONALS' ATTITUDES TOWARDS PEOPLE WITH DISABILITIES

The negative attitude that the society in general holds towards people with disabilities and its implications on the quality of their life, have been an area of interest in many researches in the last decades. In recent years, the focus has shifted specifically in investigating the quality of the attitudes of healthcare professionals towards people with disabilities.

There are many factors that can contribute in influencing the attitudes towards people with disabilities. For instance, it has been found that the attitude of a physician can be adversely affected by negative attitudes of his peers (Mitchell et Al. 1984), as well as it has been shown that variables such as age, gender, nationality, marital status, educational level, socioeconomic status, place of residence and previous experience with disability, do have an influence on the attitude as well (Yuker, K. 1965).

2.1 Attitude of healthcare students

In the study of Tervo, Palmer & Redinius (2004), a cross-sectional survey was performed to investigate the attitude of different health professional students' attitudes towards people with disability, with the hypothesis that the results would differ depending on the area studied. As the results showed, nursing students were those who held the most negative attitudes, whereas occupational therapists were those with the most positive attitudes, both in this study and in the one carried out by Stachura & Garven (2003). In contrast, Ten Klooster et Al (2009) founded that nursing students do hold a more positive attitudes when compared to non-nursing peers, which was seen constantly even when compared with other variables. However, when considering the variable of having a friend or relative with physical disabilities, the entire sample showed that it was a determinant in holding a more positive attitude.

In a comparative study of the attitudes of medical students from USA and Canada, Tervo et Al. (2002) found that the first-year students held similar attitudes and had more negative attitude than what is recommended by the SADP norms(Scale of Attitudes towards Disabled People). In this study it was shown that the attitudes tended to be more negative for those studying in rural schools, whereas those with a background in disability tended to hold more positive attitudes, and the more the attitudes were positive, the more they felt comfortable with challenging rehabilitation situations.

2.1.1 Attitudes of physiotherapy students

The attitudes of physiotherapy students have been investigated in comparison to other health care students. In the study mentioned from Tervo, Palmer & Redinius (2004), the students' attitudes were measured with the Attitude Towards Disabled People scale measurement, which is an instrument that measure the extent to which a person with disabilities is. As the results showed, while physiotherapy students had a higher score compared to nursing students, they also showed to have a much lower score when compared to occupational therapists. In another study done by Stachura & Garven (2003), the physiotherapy students' attitude was compared to the occupational therapists'. As a result, physiotherapy students were found to hold very negative attitudes although they showed an improvement at the end of their studies. Nevertheless, the results of the study point out an issue that is reason for concern for the Chartered Society of Physiotherapy, highlighting the need to investigate more on those students' negative attitudes and why despite those, the students chose to pursue a career in physiotherapy.

3 DISABILITY

“The only true disability is a crushed spirit” – Aimee Mullins

When people refer to disabled people, a negative meaning is usually implied. The dictionary itself represents how people view the concept of disability and the definition

of a disabled person. As a matter of fact, on the online edition of the English Thesaurus, it is possible to find the following synonyms for “disabled”: *differently abled, physically challenged, handicapped, challenged, weakened, crippled, paralyzed, impaired, lame, mutilated, maimed, incapacitated, and infirm* (Website Thesaurus). This can therefore mean that those who have a disability could be described with any of the previously mentioned terms. As opposite to “disabled”, the Thesaurus lists the following adjectives: *strong, sound, fit, healthy, robust, sturdy, hale, hearty, able-bodied* (Website of Thesaurus). If these are antonyms, it therefore means that a “disabled” person cannot be qualified with any of those adjectives.

As previously mentioned in the introduction, in her TED’s conference Aimee Mullins introduced the prejudices related to the concept of disability, exploring what are the meaning with which people refer to “disabled” persons, which all were found to be strongly negative. Aimee also gave insights on the matter of how a person can perceive his own disability largely depending on the perception of it, of those people around him. In fact, she states: “there’s an important difference and distinction between the objective medical fact of my being an amputee, and the subjective societal opinion of whether or not I’m disabled. Truthfully, the only real and consistent disability I’ve had to confront is the world ever thinking that I could be described by those definitions! (..) It’s not about the words, it’s what we believe about people when we name them with these words, and how we construct those values. Our language affects our thinking and how we view other people. (...) By casually doing something as simple as naming a person (...), we might be putting lids and casting shadows on their power” (Mullins, A. Oct 2009).

4 SATAKUNTA UNIVERSITY OF APPLIED SCIENCE

The Satakunta University of Applied Science operates mostly in Pori, the major town of the Satakunta region in the west coast of Finland, as well as in Rauma, Huittinen and Kankaanpää. The Satakunta University of Applied Science has in total six faculties within eight campuses. The Health Care campus (called Tiilimäki), where the degree in physiotherapy is located, hosts as well the program of Nursing and Public Health Nursing, Rehabilitation Counselling and Planning, Social Services,

Human Ageing and Elderly Services. There are two degree programs in Physiotherapy: the Finnish program (coded as FY groups), and the International one (coded as PH groups), with the latter being entirely taught in English and whose classes have a presence of both Finnish and foreign students in different proportions. In fact, SAMK is the only University in Scandinavia to offer a degree program in Physiotherapy taught in English. Both degree programs in Physiotherapy lasts 3,5 years for a total of 210 credits (SAMK webpage. 2014).

4.1 Compulsory studies

4.1.1 Adapted Physical Activity

“Adversity is just change we haven’t adapted ourselves to, yet.” Aimee Mullins

Physiotherapists are expected to be able to promote physical activity for people with different ages and level of abilities, including people with disabilities. In SAMK this is reflected by the implementation of 15 credits on instructing and promoting physical activities, 5 of which are entirely focused on APA (SAMK’s curriculum in Physiotherapy. 2014).

Adapted Physical Activity (APA) is a term used to define physical activities that are adapted to meet the needs of people with any kind of disability, in order to promote health and an active lifestyle. The APA course is structured into three different modules, which are carried out starting from the third year till the first semester of the fourth one. During their training in APA the students have the chance to learn how to plan and instruct physical activities adapted for people with different kinds of disabilities. The students learn how to practically implement what they have learned, through collaboration projects, especially with local centers that focus on rehabilitating work activities for people with intellectual disabilities.

The APA-related activities carried out in SAMK has raised noticeable interest in the physiotherapy students, data that has been also confirmed by the study of Enni Mäkitalo (2011), former SAMK physiotherapy student, in which she investigated how adapted physical activity is reflected in the bachelor’s theses of SAMK

physiotherapy education. The results of the study in fact showed that between 1997 and 2009, 57 theses focused on APA, 72% of which had co-operational partners. Of these partners (45% were institutions of social services and healthcare), 57% were located in the city of Pori, 33% in different Finnish Municipalities and 4% were international. In her study, Mäkitalo showed that for the nature and the implementations of the theses' projects, the physiotherapy education in SAMK can influence the regional, national and even international development of adapted physical activity.

4.1.2 Adapted physical activities in the local sport center

As already mentioned, the physiotherapy curriculum in SAMK include 15 credits dedicated to instructing and promoting physical activities, which includes the adapted physical activity course. As a practical part of the course, in their first year of study, the students are given the opportunity to visit the local sport center in which they can try different kinds of adapted sports while interacting closely with people with disabilities.

4.1.3 Accessibility Course

In the art 9 of the Convention on the rights of persons with disabilities, it is required that the issue of accessibility needs to be tackled by each country through the identification and elimination of “obstacles and barriers and ensure that persons with disabilities can access their environment, transportation, public facilities and services, and information and communications technologies” (Website of UN, 2006)

In SAMK the course in accessibility is usually taught in the second year of the physiotherapy studies. During the course, the students are given the basic theoretical knowledge about the concept and the implementation of accessibility. The students also gain practical knowledge on how to make an assessment on the accessibility of a

structure, in order to be able to adapt the environment to the person's needs, as well as to evaluate what are the potential indoor physical barriers in a house and the safety risks that need to be assessed.

From the practical point of view, the students have also the chance to test themselves what is the extent of the physical barriers that wheelchair users need to face in their everyday life. In fact they are given the opportunity to try for one day to be on a wheelchair, performing some everyday activity such as going to the grocery shop or in a restaurant, and therefore feeling as a person with disability would feel in practice (SAMK's curriculum in Physiotherapy. 2014).

4.1.4 Functional Devices Course

The functional device course is usually taught to the physiotherapy students in the second semester of their second year. The course was originally organized in cooperation with "Malike", which is a service arranged by the Finnish Association for persons with Intellectual Disabilities. The aim of the course is to train the physiotherapy students to create opportunities for people with disabilities and their families, in order to have the chance to enjoy recreational sport activities. The students are guided into understanding the value and significance that the functional devices represents for people with disabilities, which can potentially allow them to participate in meaningful activities and increase their participation in the society.

During the course, the students get acquainted with a wide variety of functional devices available for different kind of activities, and they learn how to adapt them in each environment. Moreover they are taught how to guide people with disabilities or their care givers, on the possibilities to rent and purchase those devices in Finland, knowing as well about the funding possibilities.

As part of the course, the students are introduced on how to organize outdoor events focusing on the inclusions of people with disabilities. As a way to put into practice what they have learnt, the students are also given the chance to participate to an outdoor event at close contacts with people with disabilities, and to make use of the various functional devices in practice.

In 2011, Heikki Lahti, former SAMK student, investigated how the students in SAMK experienced the course in functional devices as part of their physiotherapy studies. As a conclusion of the research, Lahti showed how the students not only considered the course as being an essential part of their studies, but they also significantly increased their abilities to facilitate the opportunity of participation of people with disabilities in meaningful recreational activities.

4.1.5 Pediatric course: visit at the local school for children with special needs

As part of their studies, the students receive their training in pediatric physiotherapy in their third year. Apart from the theoretical part of the course, the students are given the chance to visit for one day the local elementary school for children with disabilities (Koivula school). During the visit, the students can closely interact with the children with special needs and discuss with their teachers and their physiotherapists, in order to gain deeper insights on the matter and have a direct experience, along with the theoretical basis.

4.2 SAMK's projects – Free elective studies

The Satakunta University of Applied Sciences has been active in the implementation of several projects which focus on accessibility and adapted physical activity. These projects represent as well a meaningful opportunity for the students in SAMK, who can have the chance to take part in those projects and gain free elective studies in their curriculum.

4.2.1 Home for All

“Design for All” is a definition that has been developed to define a design which “aims to enable all people to have equal opportunities to participate in every aspect of society. To achieve this, the built environment, everyday objects, services, culture and information – in short, everything that is designed and made by people to be used by people – must be accessible, convenient for everyone in society to use and

responsive to evolving human diversity”(Website of Design for all Europe. 2008). In SAMK two projects for All has been developed: Home for All and Yyteri for All (6.5).

“Home for all” is a project started in SAMK in 2009. The original name of the project is “Kaikkien koti” and it started as a cooperation between SAMK and a Finnish kitchen manufacturer company called Puusteli Group Oy. The company contacted SAMK to request a consultation about which elements they had to take into consideration when designing kitchen utensils for people with disabilities. The request developed into the idea of projecting an accessible kitchen, which afterwards developed into the final idea to project an entire accessible apartment in SAMK Tiilimäki campus. The final idea involved also other housing and functional devices companies, such as Respecta Oy and Tyke Oy which had contributed abundantly with loaning several assistive devices and assisted during the development of the construction process.

There were three main purposes of the project: to develop a user-oriented research, to create a facility open to be visited and tested by anyone (professionals, students, and people with disabilities), and to be used as a learning environment for the students.

The first purpose, the research, aimed to develop the designing of an accessible house based on the direct feedback of those people with disabilities who were invited to try personally “Home for all”.

The second purpose, aimed to create an environment in which anybody could come and get acquainted with the different functional devices and accessible solution for people with disabilities.

The third, and most important for the students, was to provide a learning environment in which the students could experience in practice how a person with disabilities has to adjust to the environment to meet their needs, and they could also get acquainted with different kinds of functional devices, which wouldn’t have been possible otherwise if they would have had just theoretical knowledge (Törne et Al. 2012).

4.2.2 Yyteri for All

“Yyteri for All” was born as a research and development project which was carried out between the years 2009 and 2011 in the west coast of Finland, in the area of Yyteri beach. The project aimed to increase the local environmental and social

accessibility and the equal participation of people with disabilities through activities for all, as well as raise the awareness on those matters. The project was carried out by implementing activities such as windsurfing, sailing, kayaking, golf and winter activities like hiking and sledging. In order to adapt those activities to any age group, and any level and type of disability, new equipment were also created (e.g. innovative wind surfing gears to meet the needs of wheelchair users).

The project was recognized in both national and international level, guaranteeing the continuing of the development in the region as well as raising the awareness and interest on the matters of activities for all, from the media and publicity.

Some of the students from SAMK were able to join the project during the implementation and they still have the opportunity to take part in the activities as volunteers, which give them the chance to gain valuable experience in APA and in the adapted sport equipment, as well as it provides the opportunity to work at close contact with people with disabilities (Törne et Al. 2012).

4.2.3 Service center “Soteekki”

Soteekki is a service center located in two of the eight campuses of SAMK: Tiilimäki campus in Pori, and Kanali campus in Rauma.

From the student perspective, Soteekki is an innovative educational facility, LivingLab, which works as a clinical practice placement for students in nursing, physiotherapy, social work and international exchange students.

The working philosophy of Soteekki is to produce and provide student guided services that support and promote overall well-being within the Satakunta area, for public organizations, single and/or third parties. The students also participate in Soteekki’s marketing, product management and service divisions.

In Soteekki the students are able to develop a wide range of skills that will be useful in the working world of Social Services, Healthcare and Rehabilitation. The students learn to work in multi professional settings and learn values of cooperation, leadership and flexibility, as well as the development of work ethics, both as an individual and within a group.

Among a wide variety of services offered in Soteekki, two of them are related to the activities with people with special needs: “CP-allas” and “SPORTTIS kerho”.

The “CP-allas” consists of a weekly 1 hour session of aquatic activities adapted for clients with Cerebral Palsy that are carried out in the swimming pool inside the campus. “SPORTTIS kerho” consists of physical activities aimed for children and adults with cognitive and mental impairments, and is carried out in the gym of the University one day a week, for three different groups of clients (with age ranging from 3 to 14+ years old).

In both “CP-allas” and “SPORTTIS kerho”, the students are in charge of organizing and implementing the activities, and they have the chance to interact at close contact with people with disabilities. Apart from those activities that are carried out throughout the entire scholastic year, the 25th of November 2013, Soteekki organized a 3 hours adapted physical activities session for people with visual impairments, entirely organized and carried out by nurse, physiotherapy and social worker students. (Lamminen, H. and Rekola, N. 2013)

4.2.4 International outdoor symposium

The International Outdoor Symposium was an event organized in August 2013 by the Satakunta University of Applied Sciences, the Finnish Sports Association of Persons with Disabilities (VAU) and Malike, which are the trailblazer organizations in accessibility, functional devices and outdoor activities in Finland. The event consisted of four days symposium presenting different outdoor activities from practical and theoretical point of view. The event presented and demonstrated practically the researches and solutions for a correct posture support with the various functional devices available for a wide variety of outdoor activities for all.

During the practical activities, the participants had the opportunity to get acquainted with outdoor activities like sailing, kayaking, hiking, windsurfing and orienteering, all at close contact with people with disabilities who had the chance to try the activities themselves.

The theoretical sessions of the event were carried out in SAMK, whereas the outdoor practical activities were implemented in the west coast of Finland, in the area of Yyteri beach (15 Km away from the city of Pori).

The Symposium was directed to professionals working in the field of APA and functional devices, as well as to professionals working with people with disabilities and the students of SAMK (SAMK webpage. 2014).

5 RESEARCH PURPOSE

The purpose of this study was to explore the extent to which the unique activities of the Satakunta University of Applied Sciences can ultimately result in an improvement of the students' attitudes towards people with disabilities. If the hypothesis that a negative attitude is the result of prejudices and fear for what is not known or understood, which in turn is the result of lack of knowledge, it is suggested that an adequate education and direct experience on the matter, might ultimately affect the attitude in a positive way.

As it was suggested in the study of Tervo et Al (2002), in order to promote more positive attitudes towards people with disabilities, the students need a specific educational experience. Therefore, based on this assumption, this research aims to validate the effectiveness that the curriculum of Physiotherapy in SAMK has, in promoting more positive attitudes in the future professionals of Physiotherapy.

RESEARCH QUESTION:

- What kind of effects has studying at SAMK on the attitudes towards people with disability of the physiotherapy students?

SUBQUESTIONS:

- Can the activities/courses in SAMK potentially contribute to the physiotherapy students' more positive perception of the concept of disability? What are the activities/courses in SAMK that have contributed the most to the positive changes?

6 METHODS

The study was conducted using both qualitative and quantitative research methods, in order to gain deeper and more reliable data. In the following chapters, the methodology of the study will be illustrated in details.

6.1 Research design and sample

This research consisted of a cross-sectional study conducted at the Satakunta University of Applied Science in January 2014. The sample comprised of all the students from both the Finnish and the International Physiotherapy degree program. Despite the fact that in most European countries the Physiotherapy degree lasts three years, at the Satakunta University of Applied Science it lasts three years and a half. Although the study started in January 2014 and the majority of the students of the 4th year had already concluded their studies in December 2013, the author decided to attempt to include them in the research. This decision was influenced by the fact that they were the only ones to have completed the studies, and therefore they were considered to be of great importance for the contribution of the reliability of the results of the study. Unfortunately, the majority of the students were not possible to reach by the author due to the absence of the graduated students' email addresses in the University database. The number of students from the 4th year that were reached was 6 students from the International program and 9 students from the Finnish one. In total, the population of physiotherapy students from the 1st to the 4th year, in both programs, accounted for 139 students.

For the qualitative data, the selection of the samples was purposive. Given that the interviews were just an addition to the main research project which was quantitative, the author needed to restrict the amount of interviewees to just three. The selection criteria was that the students would have completed their studies in SAMK so that their opinions would be more reliable. The author also aimed to interview a former student who had already experience in the working life as physiotherapist for at least one year, aiming to gain data from the perspective of the real life situations that the students have after graduating.

6.2 Data collection

The data of the study were collected mainly during January 2014. Prior to the implementation of both the qualitative and quantitative methods, a literature review was performed by the author in order to investigate the studies that were done already on the topic of the attitudes of health care students towards people with disabilities.

In the search for the articles, eight databases were used, respectively: MeSh, Tyrni, Melinda, OATD, Theseus, PubMed, Ebsco, and ScienceDirect. The research inquiry used to search was “Students/physiotherapists’/healthcare professionals’ attitudes to disabilities, concept of disability, attitude towards people with special needs or disabilities.” No inclusion criteria were selected, except the articles had to be written in English. The articles were chosen by the author based on the article topic’s relevancy in relation to the thesis’s study. The theoretical material was also provided by the library of Tiilimäki campus in SAMK.

6.2.1 Quantitative data

The data was obtained by administering a questionnaire in an e-form through a browser based application. The online questionnaire was sent to the students the 9th of January 2014 and it was possible to answer it until the 14th. The date of the collection of the data corresponded with the beginning of the second semester for the 1st, 2nd and 3rd year, whereas the 4th year student had graduated in December 2013.

The questionnaire included three parts. The first part served the purpose of collecting demographic data, group and year of study, and a question in which it was asked whether the student has a friend or a family member who is disabled. The second part included the ATDP scale (form A), which will be further described in the section 6.3. The third and last part of the survey, included questions related to the activities done in SAMK. At first, the students were given a list of all the SAMK’s activities/courses related to the topic of accessibility and disability, in which they were asked to mark which one they participated in. Afterwards there were two questions asking to mark on a Likert scale to what extent the students agreed that those activities/courses had

improved their attitudes towards people with disabilities and had caused a more positive perception of the concept of disability. Lastly, the students were asked to mark the five activities/courses that they think had contributed the most to the improvements specified in the last questions.

6.2.2 Qualitative data

The data were obtained from semi-structured individual interviews, with three post-graduate students.

Two of the subjects were from the groups that had started their education in 2010, one from the international program and the other one from the Finnish program. The last subject had graduated already couple of years ago, but for confidentiality reasons agreed with the subject, the year of graduation and the group's stream won't be specified.

The interviews were done the between the 21st and the 22nd of January 2014 at Tiilimäki campus.

6.3 Instruments and reliability

The instrument used to measure the attitude was the ATDP scale (Attitude Towards Disabled People). The instrument was chosen by the author after performing a literature review to find out which one was used most frequently. Coincidentally a research was found in which a systematic review on the validated instruments was performed. Among the different validated instruments, Lam et Al (2010) states that the ATDP scale was the most widely used and tested, was consistently found to be reliable, and possess content and construct validity. The original one is form O, but for this research form A was chosen, as it is considered to be the improved version (Lam et Al, 2010). As described by the authors of the questionnaire, "the ATDP was designed to provide an adequate positive-negative scaled measure of attitudes toward the disabled with evidence of reliability and validity.(...) A Likert-type attitude scale which was relative short, easy to administer, score, and interpret was deemed most suitable for use in investigations of relationship of attitudes toward the disabled in general and other variable" (Yuker H et Al. 1970).

The ATDP form A is composed of 30 statements to which the respondents indicate the level to which they agree on a Likert-type 6-point scale from +3 being “I agree very much”, to -3 being “I disagree very much”, with no neutral level in between. If more than 10% of the items are omitted the test is considered not applicable. In order to sum the final score, a step by step analysis process needs to be carried out, including changing the signs of the items with positive wording, obtain the algebraic sum of all the items, reverse the sign of the sum, and finally, add a constant of 90 to make all the scores positive. The final score can range from 0 to 180, where the higher the score, the more positive is the attitude, with the respondent considering a person with disabilities as not being different from others.

6.4 Data analysis

The quantitative data collected from the online survey were transferred into the statistical package Tixel and subsequently analyzed using the Excel spreadsheet. The qualitative data from the recordings of the individual interviews were transcribed personally by the author and then analyzed first individually and then compared to one another.

7 RESULTS

In these following chapters, the results of both the qualitative and quantitative study will be shown. It needs to be reminded that the present study was designed to focus mainly on quantitative data, thus the qualitative part is meant to be a mere addition.

7.1 Quantitative data

The following results from the quantitative method are shown in the following chapters by first presenting the demographical characteristics of the sample studied, followed by the results of the ATDP score, and finally by presenting the results of the main research's question related to the change of the students' attitudes in relation to the studies in SAMK.

7.1.1 Description of the sample

Of the initial 139 number of students selected, the questionnaire was actually sent to 118 of them. The 1st year students from the Finnish degree program were excluded because of a mistake by the author. Of the 118 questionnaires, 67 returned, accounting for a total response rate of 56%. Figure 1 displays the uneven response proportions within each group.

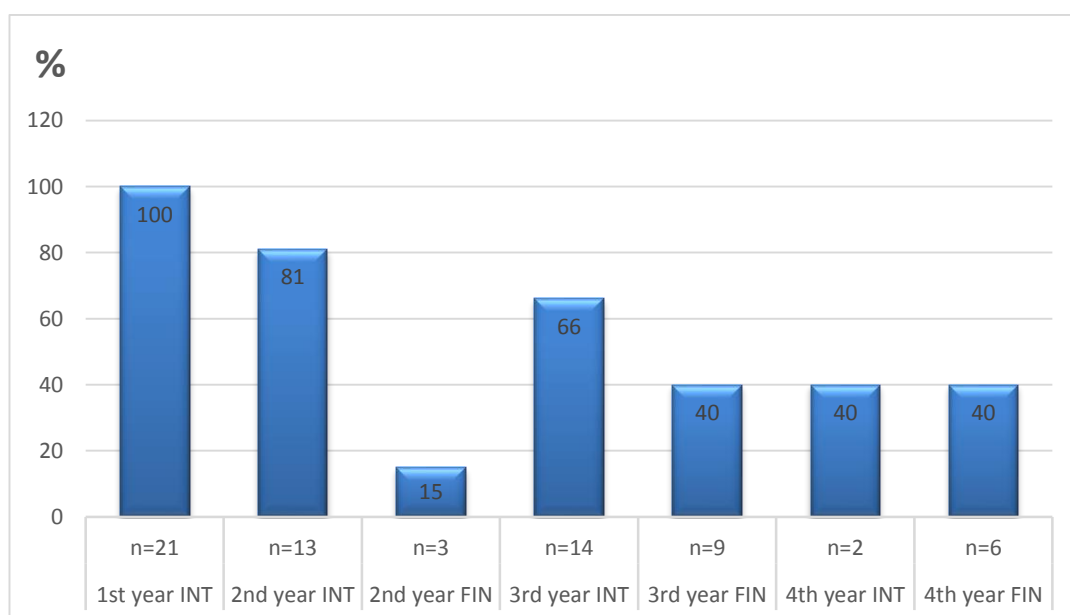


Figure 1. Distribution of the response in each group.

Three-quarters of the students were Finnish, and the remaining 25% of students had the following nationalities: American, Australian, Spanish, Italian, Icelandic, Israeli, African, Bangladeshi, Polish, British, Yemeni, Russian, Lithuanian, and Estonian.

The distribution of the nationalities can be seen in Figure 2, although the exact nationalities in each group were not specified for confidentiality reasons. It should be reminded that the INT groups correspond to the international programs, therefore are the only ones that include foreign students.

The prevalent sex of the respondent was clearly female, with a percentage of 63% over the 37% of male students. The majority of the students' age was between 18 and 24 years, followed by less than a third of students between the 25 and 30 years of age, with a remaining 14% between the 31 and 40 years, and a small 3% of students over 40 years old. In the background part of the questionnaire, the students were asked to answer whether they had a friend or a family member who has a disability. The details of the answers are in Figure 3. The reason for this question is due to the need of the author to study this variable in relationship with the ATDP score and the main research questions, in order to explore the hypothesis that the students who have interaction with people with disabilities in their private life, can be more prone to score higher in the ATDP scale, and be less prone to agree to the fact that SAMK has affected them.

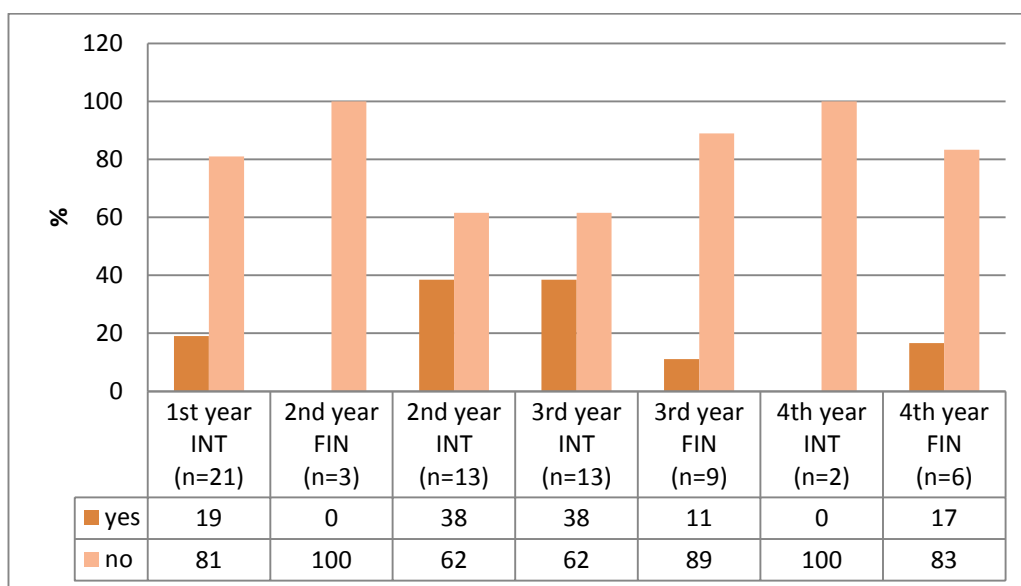


Figure 3. Students' answers to the question: "Do you have a friend or a family member who has a disability?"

7.1.2 ATDP scale

The ATDP scale as an instrument has been already described in chapter 10.3.

At first glance, the overview of the ATDP scale measurement in Figure 4 shows how the great majority of students have positive attitudes. In fact, the 74% of the students scored between 103 and 150, with just a small 3% scoring between 0 and 70.

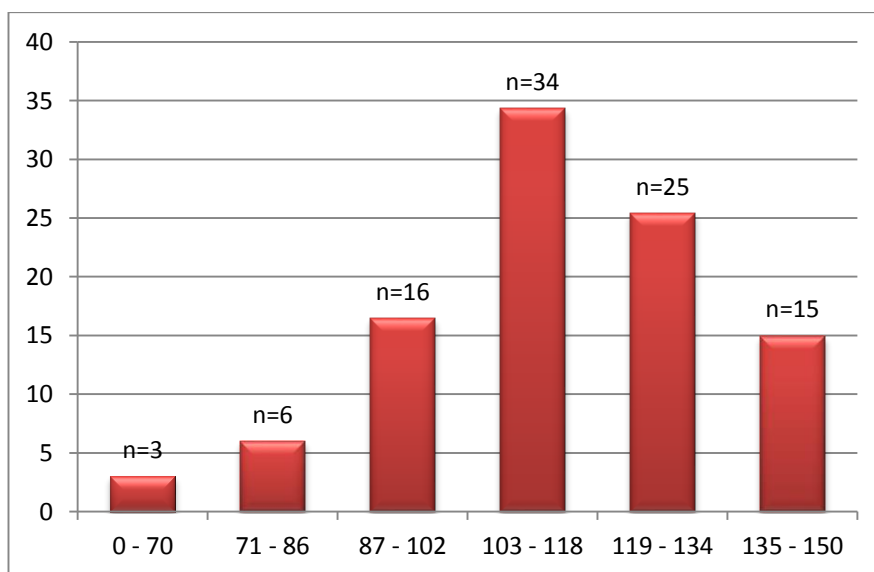


Figure 4. Overview of the results of the ATDP scale measurement

If looked in detail in Figure 5, the results do not show drastic differences among the groups. This result is confirmed by the mean values showed in Table 1, whose scores range from 107,7 to 124, with a p-value statistically not significant. It is useful to remind that the values of the ATDP can be interpreted by considering that the results can range from 0 to 180 and the higher the value, the more positive attitude is. The total mean value accounts for 112,9, which could be interpreted as a tendency of the whole population studied, to hold a rather positive attitude towards people with disabilities. The only groups that included students holding a negative attitude are the first and third year students from the international groups, with respectively 5% and 8% of students who scored in the lowest levels of 0-70 and 71 – 86 in equal proportions. In contrast, the same two groups show to include as well the great majority of students in the highest level of 135-150, with 24% of the students of the 1st year INT and 31% of the 3rd year INT. As a matter of fact, these three groups also have the

highest standard deviation. However, it needs to be considered that these groups had a higher percentage of respondents therefore having a greater population.

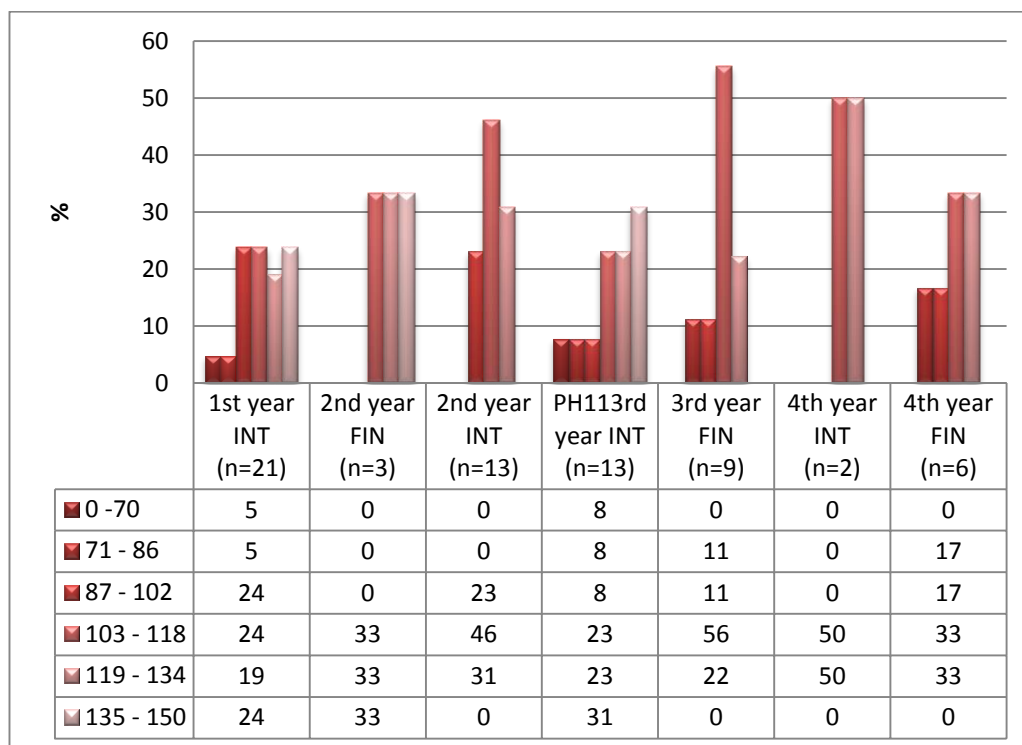


Figure 5. Distribution of the ATDP scores in each group.

Table 1. ATDP score within each group.

	<i>PH13</i>	<i>FY12</i>	<i>PH12</i>	<i>PH11</i>	<i>FY11</i>	<i>PH10</i>	<i>FY10</i>	<i>Tot.</i>
Average	112,8	124,0	110,8	115,9	109,6	122,5	107,7	112,9
Standard Deviation	22,4	21,1	12,3	24,4	14,9	6,4	16,2	19,1
Freq.	21	3	13	13	9	2	6	67
p = 0,85486								

The results of the ATDP scale were also compared with the variable of whether or not the student had a relative or a friend with a disability. From the statistical analysis, it was possible to state that those who had a relative or a friend with a disability did not necessary hold a more positive attitude. In fact, the mean value of the ATDP score accounts for 111,2 for those who answered “yes”, and a mean of 113,5 for those who answered “no”, resulting in a p-value of no statistical significance. In the analysis of the ATDP score with the variable of sex and nationality, it could be noted that women and Finnish students are slightly more

prone to hold positive attitudes, but once again, there was no statistical significance in the data.

7.1.3 Relation between changes in attitudes and SAMK

As already explained in the section 10.2.1, the last part of the online questionnaire included questions focusing on the main purpose of the research. In one question, the students were asked to mark their level of agreement on the statement: “The activities/courses I had in SAMK have contributed to improve my ATTITUDE toward people with disabilities”. It must be noted that the only group that was excluded in the analysis of the answers was the 1st year INT. The reason is that those students are from the first year, hence they have not had any opportunity to join the activities mentioned in the questionnaire, which are implemented from the second year onward. As shown in Figure 6 the level of the general agreement with this statement accounts for 89% with the highest percentage of the respondents selecting “I agree very much,” accounting for 35%. In contrast to this, just 11% of the respondents did not agree with the statement, with only a 2% who disagreed very much.

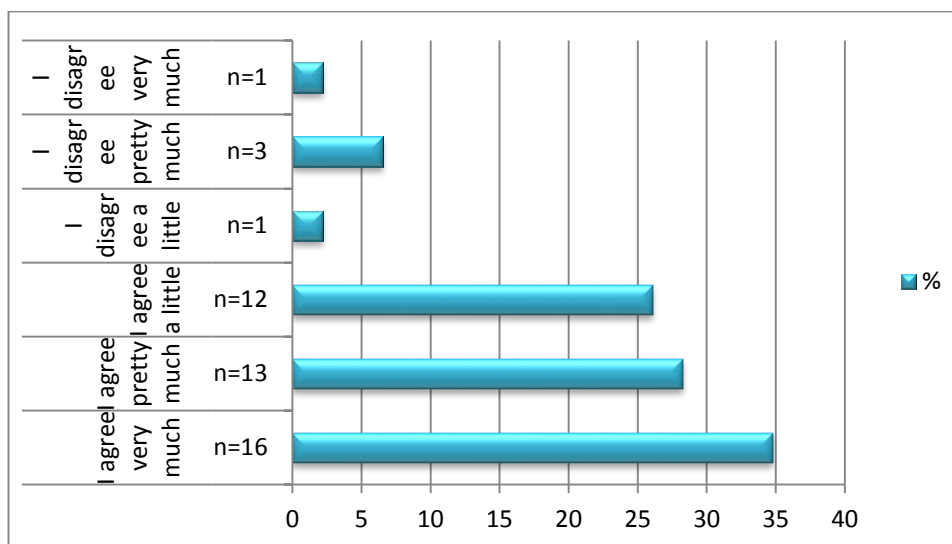


Figure 6. Distribution of the agreement of the students on the statement: “The activities/courses I had in SAMK have contributed to improve my ATTITUDE toward people with disabilities”

In another question, similar to the previous one, it was asked to select the level of agreement with the statement: “The activities/courses I had in SAMK had contributed to have a more positive perception of the CONCEPT OF DISABILITY”. The percentage of the general agreement and disagreement was identical to the previous question related to the change in the attitude. However, there are small but slightly significant differences. In fact, as can be noted in Figure 7, the percentage of the students who selected “I agree very much” increased by 2% compared to the previous question, in which the percentage was 35%. In addition, the students who selected “I agree pretty much” were significantly higher than previously (almost 40% instead of 28%). Furthermore, the percentage of students who selected “I disagree very much” this time was 0%, in comparison with the 2% of the previous one, suggesting that those who have not seen a contribution in the change of attitude, might have noticed it instead on a more positive perception of the concept of disability.

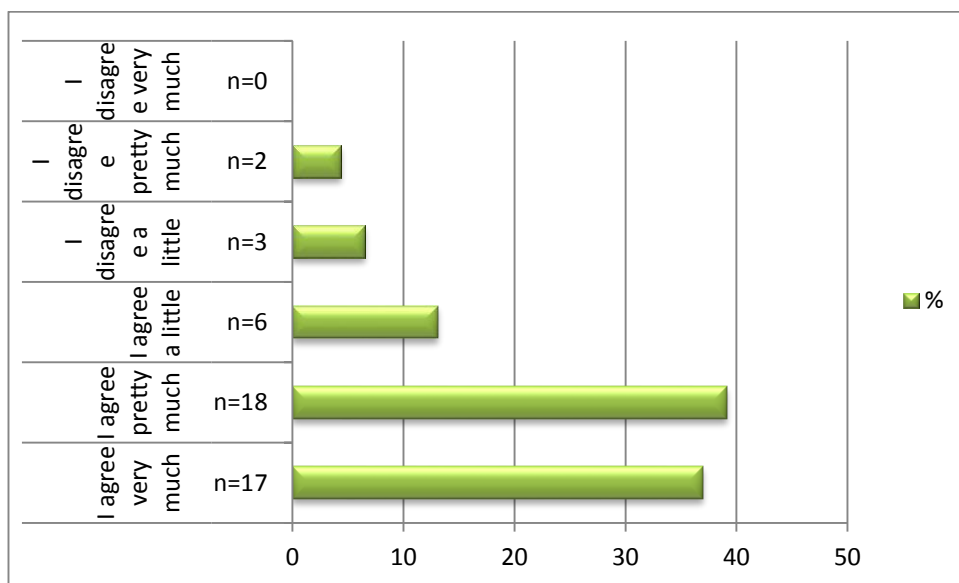


Figure 7. Distribution of the agreement of the students on the statement: “The activities/courses I had in SAMK had contributed to have a more positive perception of the CONCEPT OF DISABILITY”.

Both questions were studied with other variables. There was no statistical significance found in relationship with sex and nationality, whereas there was an

interesting finding in relationship with whether or not the students have a relative or a friend with a disability. In fact, the percentage of the agreement on the questions' statements was 96% (in regards of the attitude) and 94% (in regards to the concept of disability) for the students that answered "no" and had no relative or friends with a disability. In contrast, among the students who answered "yes", a much lower 66% and 75% agreed with the statements respectively regarding the attitude and the concept of disability.

If we look at the distribution of the level of agreement in each group, it is possible to notice that the only groups which include students who disagree with both statements are the 2nd year INT and 3rd year INT. To begin with the question related to the change of the attitude, Figure 7 shows how the percentage of students that agreed with the statement increased sharply throughout the years of study. If we look at the percentages of students in each year of the study, who selected "I agree very much", we can see just an 8% of the 2nd year students, from the 3rd year groups it is seen an increased 38% and 33%, and finally, 100% and 83% from 4th year INT and 4th year FIN. As a matter of fact, these groups are the only ones that have had completed their study program, and thus are the only ones who have had the chance to experience the great majority of the courses and activities in SAMK that were mentioned in the questionnaire. Focusing on the question related to more positive beliefs about disability itself, the groups showed the same results, except that a total of 15% of the 2nd year INT this time agreed "very much", in contrast to the previous 8%.

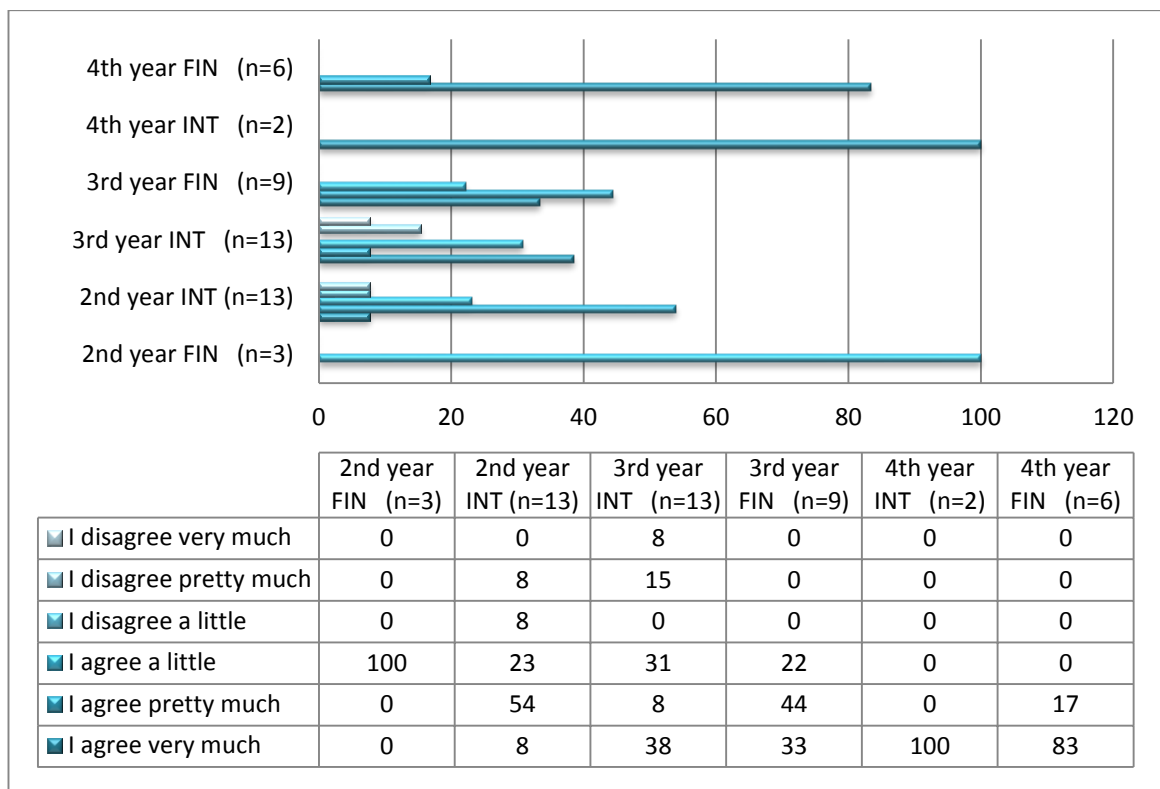


Figure 8. Proportion in each group of the agreement to the statement "The activities/courses I had in SAMK have contributed to improve my ATTITUDE toward".

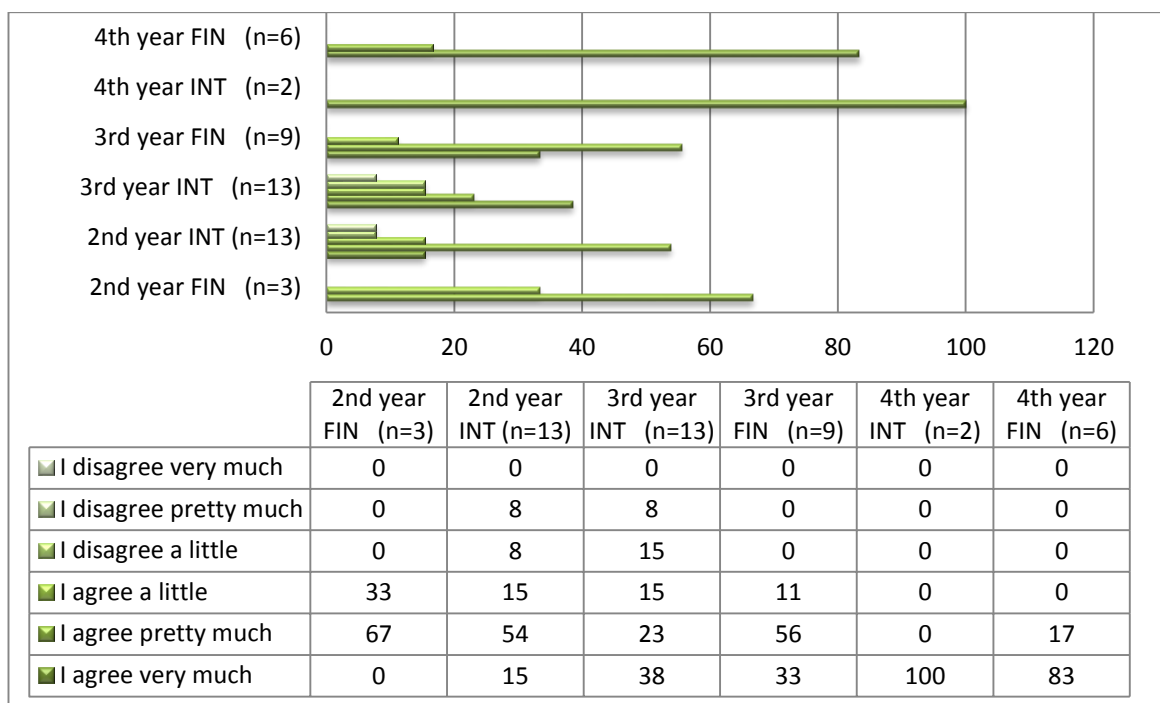


Figure 9. Proportion in each group of the agreement to the statement: "The activities/courses I had in SAMK had contributed to have a more positive perception of the CONCEPT OF DISABILITY".

The extent, to which the students agreed that SAMK had contributed to improve their attitude and their perception of disability, was studied with the variable of the ATDP score, to determine if the students who hold a negative attitude in general, are also more likely to disagree with the questions' statements. No statistically valuable data was found in relation to the question on the perception of disability, which in contrast, was found with the one related to the improvement of attitude.

Table 2 shows how there was almost a statistically significant evidence regarding the fact that those who disagreed "very much" with the statement, were also holding a negative attitude towards people with disabilities in general, with almost half of the total ATDP score compared to the one of those who "agreed very much".

Table 2. ATDP score of the students in each category of the level of agreement with the statement: "The activities/courses I had in SAMK have contributed to improve my ATTITUDE toward"

	Average	SD	Freq.
<i>I agree very much</i>	118,1	16,3	16
<i>I agree pretty much</i>	109,3	11,2	13
<i>I agree a little</i>	112,3	20,9	12
<i>I disagree a little</i>	99,0	0,0	1
<i>I disagree pretty much</i>	124,0	14,2	3
<i>I disagree very much</i>	67,0	0,0	1
Tot	113,0	17,6	46

p= 0,0493 Statistically almost significant

At the end of the questionnaire, the students were asked to select 5 of the activities or courses that they had the chance to join in SAMK, that they felt had contributed the most, both in improving their attitude and developing a positive perception of the concept of disability. Figure 10 shows clearly that the 5 most influential activities and courses were: Yyteri for all (100%), International Outdoor Symposium (90%),

the outdoor event for the Functional Devices course (77%), APA part 1 (71%) and SPORTTIS from Soteekki (69%). It needs to be reminded that some of the activities like “Yyteri for All” and the “International Outdoor Symposium” are not compulsory, hence not all the students had joined them.

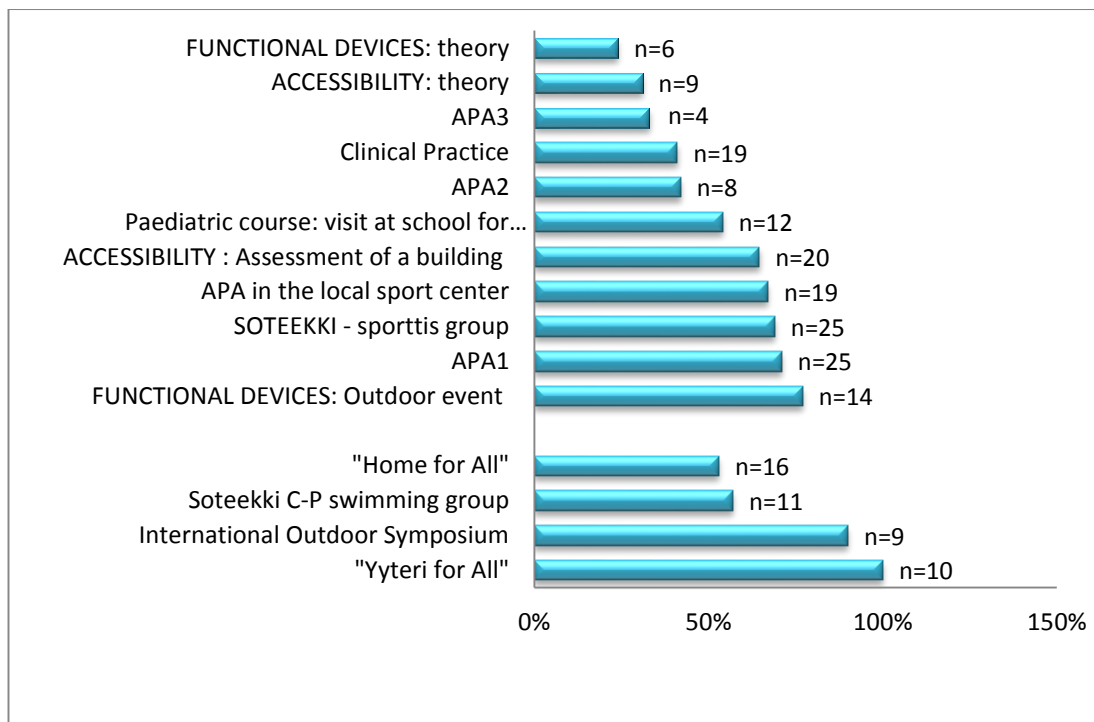


Figure 10. Activities and courses in SAMK, that the students selected has being the most influential in their improvement of attitude towards people with disabilities, and in their more positive perception of the concept of disability

7.2 Qualitative data

As an additional part of the research project, the author aimed to include qualitative data in the form of interviews in order to gain deeper insights and possibly more details that could complement the quantitative ones.

On the 21st and 22nd of January three personal interviews were performed by the author with two physiotherapy students from the 4th year INT and 4th year FIN group, and with one former SAMK students who is currently working as a physiotherapist.

The interviews were semi-structured, but there was no rigidity in the sequence and on the formulation of the questions, which were applied differently by the author in order to meet the needs of the interviewees while explaining themselves. In fact, the author

aimed to avoid such rigid and pre-formulated questions, which could have turned the interview in a formal situation that may had make the interviewees feel less at ease and less prone to share freely their experiences.

The results of the interviews gave a better understanding on the factors that have mostly affected the students' process of change, as well as some details on the components of those changes.

In fact, throughout each interview, the author noticed some similar patterns that all the three interviewees had, regardless of their background or personal experiences.

Firstly, when asked about the quality of their change in attitudes, all the students mentioned how they never actually thought to have ever held a negative attitudes toward people with disabilities. Nevertheless, when compared to the end of their studies, they all stated that they indeed noticed a valuable change into a more positive attitude, and in the opening of their minds regarding the concept itself of disability. They all mentioned how, as a result of their studies in SAMK, they had learnt to perceive people with disabilities as equal to any other person, and how every person can aim to have a high standard of quality of life, despite any disability.

This is elucidated by some comments from the different interviewees, such as:

- *“I feel I changed in a way that I don't feel that a disability is such a bad thing...yes, it can be disabling, but you CAN also have a really fulfilling life! Disability is NOT going to stop you from doing things! You just need to figure out THE WAY to do those things”*
- *“I am more open minded now...and I've learned that of course I need to treat people with disabilities as just anyone else!”*
- *“I have learned how to help them...but mostly I leaned NOT to look at them as people that need help!...you know what I mean..”*

Secondly, every student mentioned how they could not recall a specific factor that has made them shift their attitudes into more positive ones, but it was rather the combinations of a multitude of them. All interviewees stated that a crucial contributing factor that made their education in SAMK as being so influential in their positive change of attitude, were all the opportunities they were given throughout the years, to closely interact with people with disabilities, in a wide variety of activities. For instance, they all recalled the APA practical activities and the outdoor event of the Functional Device course as the most contributing experiences. In fact, the interviewees stated how the chance to interact and get to experience practically what they learned in theory, was fundamental in the process of changing their attitudes and gain their professional skills. The students also mentioned that a contributing factor was also the positive and enthusiastic attitudes of their teachers in implementing those courses, which set the starting point of their shift in their own attitudes.

Thirdly, an element that was often mentioned and was connected with the opportunity of the close interactions, was a “gain in courage”. The interviewees described how, even though they thought they were not holding prejudices and negative attitudes, they were still reluctant from interacting freely with people with disabilities. This aspect was described as a consequence of the lack of knowledge and direct experience, as almost being scared of what was unknown. As a matter of fact, the reluctance disappeared during their studies thanks to the theoretical knowledge and the practical experiences, to turn instead into the courage of approaching and interacting spontaneously with people with disabilities.

Regarding the gaining of specific professional skills, it was noted how the students were aware that studying in SAMK gave them some knowledge that other colleagues from other universities did not have, even with many years of work experience. The focus was specifically on the knowledge of functional devices and on the familiarity with the contact with people with disabilities. Two of the interviewees mentioned how they could see a definite difference with the other more experienced co-workers. While describing an episode during one of her clinical placements in which it was needed to plan a session for some rehabilitees, one interviewee stated that: *“most of the physios didn’t know about the functional devices or about Malike...they were just planning the session, but they really didn’t know about them. Some of them had*

even over 20 years of experience...they knew all the treatments...but we (SAMK students) were the only ones to know all the functional devices.”

Lastly, but not least importantly, the consequences of the change in the interviews’ attitudes had also an impact on a bigger scale. In fact, when the topic of the attitudes of their friends and family was brought up, they all stated that they had seen a more positive change in them, although to different extents. It was common to all of them, that either their relatives or their friend, or both, had prejudices and held negative attitudes towards people with disabilities. Whether it was consciously or unconsciously done, an effort into changing those misconceptions and negative attitude was performed by all the interviewees, such in the following extract:

- *“Well, I actually tried to change them...consciously! (laugh) I told them stories...you know...I always tell them how great is to work with them (people with disabilities). They (friends and family) see disabilities as things that hold you back a lot...and they are very surprised when they hear that someone with a disability has done something! Like skiing...they see it as something extraordinary! I think I managed to change some opinions about this: that people with disabilities are not all sad and miserable, but they also can have a nice life!”*

8 CONCLUSION

As the general results clearly showed, a conclusion can be drawn by stating that studying physiotherapy in SAMK does indeed affect positively on the students’ attitudes towards people with disabilities, as well on their perception of the concept of disability.

The elements that were recognized by the students as being most influential, were multiple, but among all, the most significant ones were considered to be the opportunities of closely interact with people with disabilities and to provide them with meaningful activities (e.g. adapted physical activities, recreational activities in

the form of sport). The results of the theoretical training received was not comparable with the results of the practical activities, but nevertheless it was considered to be valuable in order to gain the needed knowledge to implement the activities.

The positive attitudes of the teachers while implementing the courses and the activities, was also a factor that facilitated the improvement in the students' attitudes themselves.

The clinical practice was not recognized by the students as being of great impact in the improvement of their attitudes, therefore stressing the needs of other Universities to include in their curriculum some other forms of practice at close interaction with people with disabilities, as SAMK does. This will not only benefit the students, and their future patients, but will also promote meaningful activities for those part of the society who has any kind of disability. In fact, it needs to be reminded that, for the nature of its cooperation and the nature of its activities, SAMK has been recognized as a regional promoter of physical activity for the population with disabilities.

From the qualitative results it was possible to assess that the students' improvement in their attitudes and in their perception of the concept of disability, also had a relevant impact on a bigger scale. In fact, whether consciously or unconsciously, the students were able to positively affect their relatives and friends about their believes on people with disabilities, being able to start the process of fostering more positive attitudes in their close ones. If the amount of the students who showed to hold a positive attitudes and positive believes is taken into consideration, and that amount of students is multiplied by the people that they are closest to, it is suggested that the effects of the positive attitudes and believes of those students could contribute as well to the fostering of positive attitudes and believes on a bigger scale on a social level.

Based on this assumptions, it could be concluded that if other Universities would follow the example of SAMK, not only they will form future professionals that will be able to meet the professional demand of their working life in contact with people with disabilities, but they would also contribute to the promotion of the activities for people with disabilities, as well as the fostering of positive attitudes on a bigger scale.

9 DISCUSSION

The main aim of this research was to explore the effects that the curriculum of Physiotherapy at SAMK have on the students' attitude towards people with disabilities. Focusing on the results of the ATDP scale, it was shown that the scores were rather high for the great majority of the students (74% scored between 103 and 150), suggesting that all the population studied tended to hold rather positive attitudes.

As it was already mentioned in chapter 2, the variables of age, gender, nationality, marital status, educational level, socioeconomic status, place of residence and previous experience with disability, do have an influence on the ATDP score (Yuker, K. 1965). As opposed to this findings, it was interesting to notice how there were no statistically significant interactions between the ATDP score results and any other variable studied. In fact, a minor difference was noticed just with the variable of age and nationality, showing that women and Finnish students are slightly more prone to hold positive attitudes, but there was no significant difference. The other unexpected finding was that there was no interaction between the ATDP score and the variable of whether or not the student had a relative or a friend with a disability.

As it was presented in details in chapter 7, the percentages of the general agreement on the fact that SAMK had contributed in the improvement of the attitudes, was astonishingly high. An even higher level of agreement was shown when the students were asked whether they thought that SAMK had contributed to change their perception of the concept of disability into a more positive one. This results clearly show how the students are aware of the contribution that studying in SAMK has given in their process of change towards a better attitude and a more "open mind".

An interesting trend was seen when the percentage of agreement was explored considering the different year of study. As a matter of fact, the percentage sharply and steadily increased throughout the years, as the students had more chances to attend the various courses and activities. This trend confirmed once again how those activities really did contributed to the students' change in their attitudes and their perception of disability. The reliability of this latter conclusion is given by the similarity of the results in each year group. For instance, the percentage of students who selected "I agree very much" (chapter 7.1.3) in the second year students was just

8% , just from the international group. This percentage increased largely in the third year groups, showing 38% in the international group and 33% in the Finnish one. Lastly, the percentage peaked with 100% in the international group and 83% in the Finnish one, confirming how the activities and courses had similar impact on all the groups, and showing as well that the groups with international students were more prone to agree on the fact that SAMK had contributed to their change in attitudes and perceptions.

Originally, at the beginning stage of the research project, a qualitative research methodology was selected by the author as being more appropriate for the gain of results which included deeper insights and meaningful details. As the process progressed, the quantitative method was selected at the end, while the qualitative aspect of the research was included as being just an addition to provide further insights to the statistical results. In fact, it was thought by the author that there could have been the risk of compromise the reliability of the generalizability of the results, and thus not allow to assess properly the general impact that studying in SAMK has, in the changing of the students' attitudes. The statistical impact was therefore measured, and it provided imperative results.

From the qualitative point of view, the interviews provided important insights related to the pattern of change that the students underwent, that wouldn't have been possible to be obtained otherwise. Although having different backgrounds and area of interests, all the interviewees gave very similar results, suggesting that the argumentations about their process of change may be applicable to the majority of the students, who agreed on the fact that studying in SAMK greatly contributed in having an improvement in their attitudes.

As both the qualitative and quantitative results showed, there were specific factors that were seen as being most influential in both the process of the improvement of the attitudes, and in the more positive perception of the concept of disability.

One aspect that SAMK has in common with all the other curriculum of Physiotherapy in all the national and international Universities, is that the students have the chance to practice through Internships. From the results, the clinical practice did not receive as many selections as other activities, which is interpreted by stating

that it is not considered to be relevant enough for the improvement of the students attitudes.

From the quantitative results, the students selected the activities that most involved a direct and close interaction with people with disabilities. In fact, the theoretical parts of the courses (e.g. Functional Device and Accessibility) received a definite lower selection from the students. This latter result can be clarified by the comment of one of the interviewees, in which the student mentioned how if she wouldn't have had the theoretical course first, she wouldn't have been able to use properly the functional devices used in the outdoor event, but nevertheless, it was the practical part of the course that had a more significant impact on her. In fact, as already mentioned in chapter 7.2, all the interviewees explained how essential and decisive it was to have had the opportunities to closely interact with people with disabilities, while providing them with meaningful activities. The students in fact started to change their perception of the concept of disability from a "disabling" factor, to just something that they needed to be aware of when making the adaptations needed to perform any other activities, knowing all the environmental barriers they need to be aware of, as well as all the functional devices that they could use to overcome those physical barriers. The students were also more aware of the "social barriers" that people with disabilities have to face in their everyday life, as they became very aware of the high level of prejudices and misconceptions that people have towards them. As a matter of fact, one important aspect that was often mentioned, was the gain courage in spontaneously interact with people with disabilities. This concept was presented by them as a results of the knowledge and the experiences that they had, suggesting that a lack of those elements does cause prejudices, misconceptions and ultimately fear.

As hypothesized in the research purpose, if a negative attitude is the results of prejudices and fear of the unknown due to lack of knowledge, an adequate education and practical experience on the matter was suggested to foster positive attitudes. Therefore, this latter hypothesis has been greatly confirmed by the results of the research.

9.1 Consideration of results

9.1.1 Evaluation of the research

Overall, the research unexpectedly gave a relevant overview of the Physiotherapy students' attitudes towards people with disabilities. It was possible to obtain details about the factors that affected the improvements of those attitudes and the extent to which SAMK has contributed in it.

The research in fact underwent repeated challenges due to the lack of time available, and the lack of experience of the author, which ultimately resulted into many pitfalls and mistakes. Luckily, the mistakes thought to be very relevant during the process, didn't affect the final results of the research at the end.

The 1st year INT was not included in the results due to a mistake. Nevertheless, the main focus of the research was on the students from the second to the fourth year, who are those that can actually provide feedback on the activities done in SAMK, which the first year could not. Therefore, the mistake did not have an effect on the reliability of the study.

A question in the ATDP scale questionnaire was erroneously written twice, which at first seemed to be of a negative influence in the reliability of the ATDP results, but that was confirmed not to be a complication. In fact, in the manual of the ATDP scale, it is mentioned how the test is considered not scorable just if more than 4 items are left blank, therefore 1 item does not affect its reliability (Yuker H et Al. 1970).

The lack of time was also a limiting factor in the way the research was performed, since a pilot study was not performed before starting the actual research. This had a relevant effect on the quality of the questionnaire designed by the author, since the issues that were analyzed after receiving the final data, could not be adjusted and the quality of the questionnaire could not be improved. Nevertheless, when the final analysis of the data was performed, those issues did not ultimately affect on the reliability of the study nor on the quality of the results.

9.1.2 Discussion of reliability

The data obtained by the research represent 56% of all the Physiotherapy students in SAMK, included those just graduated in December 2013, therefore the results allow to draw conclusions that are applicable to the majority of the Physiotherapy students of SAMK. The variety of nationalities included in the study sample, can also provide an additional reliability on the transferability of the results. The reliability of the change in attitude of the students is not taken solely by exploring the results of the ATDP scores, but it relies instead on the students' agreement on the fact that they have experienced an improvement, and that this improvement was influenced by studying in SAMK. The fact that the study did not have a control group has indeed a relevancy on its reliability, and it would be interesting to develop a research in which it would be possible to implement such design of the project.

It needs to be reminded that the qualitative data gave relevant insights regarding the effects that the course and the practical activities in SAMK had on the students. It was greatly mentioned how the close interaction with people with disability had a great impact on the students, but the positive attitudes of the teachers themselves had facilitate the process of the students' improvement. This influence partially the transferability of this results, showing how the activity itself may not be the only contributing factor, unless the teacher is engaged in leading the example of holding a positive attitude.

9.1.3 Ideas for future development

The initial idea of the project was to perform a case study. Along with the questionnaire to the students to obtain quantitative data, the author wished to perform qualitative interview in the form of a focus-group study performed in each year group, in order to gain deeper insights and study the qualitative trend of the change that the students underwent throughout the study. As an addition to the research, it would have been relevant to gain quantitative data from questionnaires administered to graduated physiotherapist, in order to explore their opinion on whether or not they think that a proper training in APA, functional devices and accessibility is needed during the basic studies, in order to meet the demand of knowledge needed in the

working life. After the initial meeting with the author's supervisor of the thesis, the project was guided into a smaller research plan that was more appropriate to a Bachelor's thesis.

Nevertheless, the original idea of the project could be explored in order to find some inspiration for future studies. Based on the results of the research, the author think that it would be relevant to further explore the factors that affect the most the change in the attitudes of the students' towards people with disabilities, in order to make the needed adjustments in the design of the curriculum in Physiotherapy in other Universities at an International level. As a smaller-scale research, it would be worth to follow a first year group of Physiotherapy students, and track their change of attitudes throughout the years, in order to better analyze what are the most influential factors that affect them. As mentioned in the discussion of the reliability, it would be relevant to perform a study with the addition of a control group, in order to obtain more reliability in the results of the study. In general, the attitudes of healthcare students towards people with disabilities needs to be further explored, in order to discover solutions that can be implemented in the designing of the curriculum of the study, so that the issue could be addressed properly before the students will start their working life as professionals.

Disabled people are more emotional than other people

Most disabled persons are more self-conscious than other people

We should expect just as much from disabled as from nondisabled persons

Disabled workers cannot be as successful as other workers

Disabled people usually do not make much of a contribution to society

Most nondisabled people would not want to marry anyone who is physically disabled

Disabled people show as much enthusiasm as other people

Disabled persons are usually more sensitive than other people

PART 2

I agree very much I agree pretty much I agree a little I disagree a little I disagree pretty much I disagree very much

Severely disabled persons are usually untidy

Most disabled people feel that they are as good as other people

- Most disabled persons can take care of themselves**
- It would be best if disabled persons would live and work with nondisabled persons**
- Most severely disabled people are just as ambitious as physically normal persons**
- Disabled people are just as self-confident as other people**
- Most disabled persons want more affection and praise than other people**
- Physically disabled persons are often less intelligent than nondisabled people**
- Physically disabled persons are different from nondisabled people**
- Disabled persons don't want any more sympathy than other people**
- The way disabled people act is irritating**

Please, mark the courses/activities you had the chance to do in SAMK so far:

- ACCESSIBILITY: theoretical Course
- ACCESSIBILITY : Assessment of a building for wheelchair users
- "Home for all"
- "Yyteri for all"
- SOTEEKKI: Sporttis group
- SOTEEKKI: C-P swimming group
- FUNCTIONAL DEVICES: course
- FUNCTIONAL DEVICES: Outdoor event "winter activities"
- Adapted Physical Activity 1
- Adapted Physical Activity 2
- Adapted Physical Activity 3
- Visit in Koivula school
- URHEILOTALO: Adapted Physical Activities
- International Outdoor Symposium

I agree very much **I agree pretty much** **I agree a little** **I disagree a little** **I disagree pretty much** **I disagree very much**

The activities/courses I had in SAMK have contributed to improve my ATTITUDE toward people with disabilities

I agree very much **I agree pretty much** **I agree a little** **I disagree a little** **I disagree pretty much** **I disagree very much**

The activities/courses I had in SAMK had contributed to have a more positive perception of the CONCEPT OF DISABILITY

Please, select what are the 5 things that you think have most AFFECTED POSITIVELY your attitude/beliefs towards people with disabilities:

- ACCESSIBILITY: Theoretical Course
- ACCESSIBILITY : Assessment of a building for wheelchair users
- "Home for all"
- "Yyteri for all"
- SOTEEKKI: Sporttis group
- SOTEEKKI: C-P swimming group
- FUNCTIONAL DEVICES: theoretical course
- FUNCTIONAL DEVICES: Outdoor event "winter activities"
- Adapted Physical Activity 1
- Adapted Physical Activity 2
- Adapted Physical Activity 3
- Visit in Koivula school
- URHEILOTALO: Adapted Physical Activities
- International Outdoor Symposium
- Clinical Practice

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