

Sanna Pirhonen

PHYSIOTHERAPEUTIC GUIDANCE OF HEALTHCARE
PROFESSIONALS IN PATIENT TRANSFERRING
ERGONOMICS. GUIDING METHODS AND
PHYSIOTHERAPEUTIC SKILLS-A QUANTITATIVE STUDY

Degree Programme in Physiotherapy

2014

PHYSIOTHERAPEUTIC GUIDANCE OF HEALTHCARE PROFESSIONALS IN PATIENT TRANSFERRING ERGONOMICS. GUIDING METHODS AND PHYSIOTHERAPEUTIC SKILLS-A QUANTITATIVE STUDY

Pirhonen, Sanna

Satakunnan ammattikorkeakoulu, Satakunta University of Applied Sciences

Degree Programme in physiotherapy

May 2014

Supervisor: Törne, Mari

Number of pages: 39

Appendices: 3

Keywords: Physiotherapy, guidance, healthcare professional, ergonomics in patient transferring

The purpose of this thesis was to research information of what is the role physiotherapists have in ergonomical guidance of healthcare professionals in patient transferring and in manual handling. The additional questions were that how physiotherapists are teaching ergonomics and what are their professional's skills in patient transferring and in manual handling ergonomics.

The research was implemented as quantitative research but with open format questions I was able to gather some qualitative data. The questionnaire was divided in three main categories: Personal information, Ergonomical guidance and professional skills. The questionnaire was created with an E-form and was sent to the participants through email. The sampling size consisted of 21 physiotherapists all working in neurological and geriatric areas. The questionnaire was sent to physiotherapists working in different areas of physiotherapy in Helsinki, Espoo and Pori.

It appeared that a great percentage of participating physiotherapists guided ergonomics in their work and thought it to be more than a third of their occupation. Participating physiotherapist used several different guiding methods when guiding ergonomics, and only few physiotherapists would guide the controversial transferring and manual handling methods. The qualification as an ergonomical instructor after graduation was evaluated to be rather poor. The sample size in this study was relatively small, limiting the ability to apply the results to other settings. A broader sample of physiotherapists from multiple areas may have shown different results.

CONTENTS

1	INTRODUCTION.....	5
2	WHAT IS ERGONOMICS.....	6
2.1	Three fields of Ergonomics.....	7
2.2	Ergonomics in Healthcare.....	8
2.3	Ergonomics and Biomechanics.....	9
3	PHYSIOTHERAPISTS AS AN ERGONOMICAL INSTRUCTOR.....	10
3.1	Physiotherapists guide for safe patient transferring and manual handling.....	10
3.2	Occupational Physiotherapy.....	11
3.3	Guiding Methods.....	12
3.4	Ergonomic Patient Handling Card®.....	13
4	PATIENT TRANSFERRING AND MANUAL HANDLING.....	13
4.1	Controversial transferring and manual handling techniques.....	14
4.1.1	Draglift.....	14
4.1.2	One-Person pivot transfer.....	15
4.1.3	Orthodox transfer.....	16
4.2	New transferring techniques and methods.....	16
4.2.1	Durawall method.....	17
4.2.2	Kinesthetic method.....	18
5	ASSISTIVE AIDS.....	19
5.1	Patient mechanical lifter.....	19
5.2	Transfer assistive devices for safe handling of patients.....	20
6	RESEARCH.....	20
6.1	The purpose of my thesis.....	20
6.2	Research method.....	21
6.2.1	Data collection and participants.....	21
6.2.2	Questionnaire.....	22
6.3	Analyzing the data.....	23
7	PROCESS OF THESIS.....	24
8	RESULTS.....	24
8.1	Background information.....	25
8.2	Ergonomical guidance of healthcare professional.....	25
8.2.1	Situations where ergonomical guidance is needed.....	25
8.2.2	Guiding Methods.....	26
8.2.3	Controversial Patient transferring and manual handling methods.....	27

8.3	Physiotherapeutic skills and patient transferring and manual handling	
	methods.....	28
	8.3.1 Ergonomical patient transferring courses.....	28
	8.3.2 Self-assessment of physiotherapeutic qualification.....	30
	8.3.3 Ergonomical guidance in physiotherapy	31
9	CONCLUSION	32
	9.1 Research results	32
	9.2 Discussion	34
	9.3 Validity and Reliability of research.....	35
	9.4 Suggestions for future thesis	36
	REFERENCES.....	37
	APPENDICES	

1 INTRODUCTION

The physical loading in healthcare has increased in the past ten years. In the healthcare field the physically most loading areas are seen to be healthcare centers, home care and different kind of housing units (Tamminen-Peter et al. 2007, 16). The most physical part of the job is assisting the movement of the patients, which includes manual lifting and transferring (Parantainen & Laine 2010, 8).

In 2008 the social and healthcare field employees had an average of 12,6 sick leave days, which was slightly higher than in other fields. Musculoskeletal injuries formed a third of the sick leaves. To decrease sick leaves caused by musculoskeletal injuries requires extensive long-term work within physical risk management. In decreasing physical risks at working conditions it is essential to increase the knowledge of ergonomics and patient transferring and manual handling techniques. Assistive aids correctly used will decrease the physical loading substantially. Even though assistive aids are available they are not used or employees don't have the knowledge how to use them. (Parantainen & Laine 2010, 16)

Teaching and educating the healthcare professionals in right transferring techniques and instructing them to use right assistive aids can minimize the physical loading (Parantainen & Laine, 2010). Outdated transferring and manual handling methods are still being used when transferring patients because these methods were still taught in the beginning of 2000 century (Rantsi, 2005). Old transferring and manual handling methods used by healthcare professionals are hard to get rid of because the workforce that has been in working life a longer period of time socializes the new workers into their old methods (Tamminen-Peter & Wickström 2013, 59).

Physiotherapists are qualified to guide caregivers towards better ergonomics and activate patients during transferring. Their knowledge in biomechanics and in human physiology enables them to understand the effect of different transferring methods more comprehensively. Physiotherapists have the qualification to guide caregivers in the transferring process based on grounds of their education.(Vehviläinen 2013, 17) But the role of the occupational therapists and physiotherapists in occupational health

and ergonomics continues to emerge. Many countries are developing new, as well as expanding existing guidelines to address the complex issues in these areas of practice. (Larson & Miller 2005, 176).

The purpose of my thesis was to find out what role physiotherapists have in ergonomical guidance of healthcare professionals in patient transferring and manual handling. Among these issues I wanted to concentrate on the teaching techniques physiotherapist are using and their individual qualification and ergonomical skills. The research was quantitative research but I wanted to add physiotherapist's own experiences and thoughts through open format questions. This topic is something that I have great interests in and the topic arose from my own experiences from feeling not qualified to be an instructor for healthcare professionals in ergonomics.

The definition of a healthcare professional is a person who is granted by Valvira to use of the occupational title of healthcare professional. In this text the healthcare professional is used when describing the caregiver working with transferring and manual handling of patients. Mainly standing for Licences practical nurses and Nurses. (Valvira National Supervisory Authority For Welfare and Health 2014).

2 WHAT IS ERGONOMICS

The word ergonomics comes from the Greek words *ergon* meaning work and *nomos* meaning law. A good definition for ergonomics would be that ergonomics aim to transfer systems and tasks in such a way as to fit them to people considering aspects as human safety, health, comfort and performance. In the design of work and everyday-life situations, the basic corner stone of ergonomics is the human. Ergonomics takes into consideration the human physical and psychological capabilities and limitations to avoid unwanted, unsafe and unhealthy situations. Ergonomics knowledge comes from various fields in the human science and technology. Applying all this knowledge together, specific methods and techniques are born. Ergonomic approach is an adaptation of the work place or environment to fit people rather than the other way around. (Dul & Weerdmester 2001, 28-42)

In ergonomics the work, work equipment, work atmosphere and other functional systems are fit to meet the human needs and necessities. Ergonomics improves the safety, health and wellbeing of humans and the efficiency and the trouble-free function of systems. (Työterveyslaitos, 26.6.2013)

2.1 Three fields of Ergonomics

Ergonomics comes from several fields of human sciences and technologies and it is a holistic point of view but sometime there is a need to concentrate on a specific field. Ergonomics can be categorized into three more specific fields. (Työterveyslaitos, 26.6.2013)

Physical ergonomics concentrate in adapting physical activity with human anatomical, physiological and biomechanical qualities. Physical ergonomics highlights the design of work-environment, workstations, tools and working methods. More closely it can be seen as repetitive movements or musculoskeletal disorders. (Työterveyslaitos, 26.6.2013);(International Association of Ergonomics, 2014.)

Cognitive ergonomics is focusing on understanding how your senses work and how you perceive through them including perception, memory, reasoning and motor response. It also includes how your brain processes information and how these affect interactions among humans and other elements of the system. Cognitive ergonomic subjects include human-computer interaction, work stress, mental workload, decision-making, reliability and training requirements. (International Association of Ergonomics, 2014);(Adams 2014a).

Organizational ergonomics is a branch of ergonomics that concentrates on fitting together the technical and social aspects. It deals with the optimization of systems and it is known as System ergonomics as well. The subjects include communication, work design, shift management, teamwork and virtual organizations. (Työterveyslaitos, 26.6.2013);(Adams 2014b).

2.2 Ergonomics in Healthcare

“The adult human form is an awkward burden to lift or carry. Weighing up to 100 kilograms or more, it has no handles, it is not rigid, and it is liable to severe damage if mishandled or dropped. In bed a patient is placed inconveniently for lifting, and few industrial workers would tolerate the placing of a load in such a situation...”

(The nurses load. The lancet 1965)

In the field of healthcare it is common that the employees encounter heavy lifting and uncomfortable working positions as well as considerable amount of walking and standing. In the health care field lifting weights up to 25 kg is still common comparing to any other field of work. (Parantainen & Laine 2010, 8). Based on the Työ ja terveystieteiden tutkimuskeskuksen 2009 research the employees experience the physical load, management and the mental barrier to the loading components in their work. The same research showed that from the ergonomical point of view the most demanding ones are first aid, surgical operation room, intensive care, x-ray operation and the home care. (Työterveyslaitos, 26.6.2013)

In healthcare, ergonomics is used to improve the fluency and productivity of the work. To ensure the wellbeing of the patient and the safety of employees it requires certain things to be considered in the health care field. These include ergonomically modified work environment, assistive aids that are easily used, methods to transfer the patient safely and load-free. Through ergonomical knowledge these are being developed and the issues being solved. (Työterveyslaitos, 5.11.2013).

The most physical part when working in health care is assisting the movement of the patient and the lifting and transferring manually. By manually meaning when caregiver has to use muscle force to move a certain load by lifting, pushing, pulling, rolling or carrying. The main principle is to avoid patient transferring by lifting manually and avoid working in inconvenient positions. Teaching and educating the caregivers in the right transferring techniques and by using right assistive aids the load of caregivers can be minimized. (Työterveyslaitos, 26.6.2013)

Ergonomics plays an important role in the hospital wards, institutions and in home care. Most of the patients in these areas have restrictions in activity due to a disease or to a recent surgery. In general, most of the patients in the hospital wards need treatment in bed and assistance in daily activity. These patients add the strain to the work. In some cases the lack of workforce indulges the workforce to perform patient transferring and manual handling on their own. This leads to neglecting the correct ergonomics and in some cases causing occupational accidents. The most physically loading part is described to be performing the daily activities, such as getting in and out of bed or chairs, bathing, toileting and feeding. To assist the patient in these activities the healthcare professional may strain herself with manually lifting, forward bending, twisting, and reaching. (Nelson, Motacki & Manzel 2009, 11-14), (Hänninen 2005, 115-117).

2.3 Ergonomics and Biomechanics

Biomechanics studies the human movements through physics and mathematics. It concentrates on the forces that come into existence in human body and how it impacts the different parts of it. Understanding the basic elements of biomechanics guides you to recognize the basic principles of movement and weight burden. The information of these helps you to choose correct assistive aids. Forces that strain the musculoskeletal system from outside needs to be balanced by the inner forces that are muscles. Some of the basic principles of the biomechanics are body's center of gravity, surface bearing, body's balance of mass and different forces, which affect the body. (Tamminen-Peter & Wickström 2013, 78)

In well-balanced position the body settles evenly on the midline of the body so that the muscles supporting posture are loaded as little as possible. Relaxed and natural standing position requires good body awareness. If standing position is straight the body weight settles smoothly around the midline and body structures form strong pillar, which supports the weight, therefore the needed muscle force to support the posture is small. When standing position is in the middle the body is not drawn to stand up for the gravity and can be relaxed, the energy is available for other body functions. (Tamminen-Peter ym. 2007)

3 PHYSIOTHERAPISTS AS AN ERGONOMICAL INSTRUCTOR

Patient guidance is recognized to be an essential and valuable part of physiotherapy. It has been claimed that in physiotherapy the guidance plays a more essential role than in any other healthcare professions. Lately the importance of guidance has been highlighted in the prevention of diseases. (Rindflesch 2009, 193-194). Even though the patient guidance is an essential part of physiotherapy it has been studied very little. The reason for this might be the complexity of it: guidance as an intervention cannot be measured as easily as other physiotherapeutic methods. Another reason why it doesn't appear to be interesting to the researches is because most physiotherapists have very little education in the strategy of patient education. And the third reason might be because physiotherapists who have very little experience in guiding patients might not want to participate in a research. (Rindflesch 2009, 193-194).

3.1 Physiotherapists guide for safe patient transferring and manual handling

Occupational healthcare is often the organization that offers ergonomical guidance and education. For workplaces to be able to achieve ergonomic working skills requires good co-operation and multiprofessional collaboration. Occupational physiotherapists have an important role in maintaining and improving the professional skills and working abilities of the employees. Their role is to work as an interpreter between the management and to the work environment designers. And also part of their profession is to guide and educate the employees. (Kukkonen, R. 2001, 15).

Health education, prevention of injury and guidance are part of the physiotherapist profession. (Talvitie, Karppi & Mansikkamäki 2006, 89)

Physiotherapists are qualified to guide healthcare professionals towards better ergonomics and activate patients during transferring. Their knowledge in biomechanics and in human physiology enables them to understand the effect of different transferring methods more comprehensively. Physiotherapists have the qualification to guide healthcare professionals in the transferring process based on grounds of their education. Physiotherapists do not only concentrate on the ergonomical guidance of the healthcare professional but also understands the patient approach and implements the patients comfort and safety in transferring situations. First of all physiotherapists are

able to guide the healthcare professional to use correct transferring methods based on the physical capability of the patient. Physiotherapists have the knowledge to educate the healthcare professionals in understanding their personal physical abilities and how it influences the transferring process. Based on this physiotherapist may encourage the healthcare professional to increase their physical condition to ease their workload. Physiotherapist working at the hospital ward may mediate the information from the occupational physiotherapists to the employees; in some cases take the responsibility to work as ergonomic supervisors. Ideal situation in the hospital wards would be that the physiotherapist and the healthcare professionals would work together to achieve better ergonomics. (Vehviläinen 2013, 17)

3.2 Occupational Physiotherapy

Based on the (Työterveyshuoltolaki 21.12.2001/1383) occupational physiotherapist is a specialist who is licensed physiotherapist and has required qualification on occupational healthcare from university of applied sciences or from the university. One of occupational physiotherapists expertise is ergonomics. (Työfysioterapeutit Ry, 2014). Occupational physiotherapist specializes in physical loading in occupation, assessment of loading and development of the work environment ergonomically. Part of the profession is to guide employees in functional and professional performance in their work environment by teaching correct working positions, methods and movements. Occupational physiotherapists also guide employees toward smooth working rhythm. (Työterveyslaitos, 2012)

Occupational physiotherapists need to go further than traditional physiotherapists. Physiotherapists are mainly concerned with restoration of the functionality to the level of activities of daily living. Occupational physiotherapists concentrate in restoration functionality to the level of job requirements and preventative of work-related injuries and re-injuries. Occupational physiotherapists not only concentrate on the rehabilitation and secondary preventative but also with the design and implementation of primary preventative programs. The preventative programs should concentrate on job evaluations and intervention programs. (Vieira 2006, 1564)

3.3 Guiding Methods

Physiotherapists implement verbal, visual and manual guidance. (Talvitie et al. 2006, 192). Feedback has an important role in guidance. When physiotherapists have been observed in interaction with patients, it has been discovered that physiotherapists guide through explaining and verbal guidance and also by showing example. (Talvitie, Karppi & Mansikkamäki, 1999, 87)

There are three different guiding methods that are being implemented when guiding a new skill. Guiding methods are based on human's ability to receive and handle information. Visual guiding is when the instructor is demonstrating the movement in other words showing how the movement is carried out. In the beginning of the learning process the movement should be carried out with the natural movement speed. Person demonstrating the movements should bring out all the phases of the movements. After the guidance the learner will perform this movement together with the "patient". Verbal guidance is meaningful and necessary in the beginning of the learning process. Verbal guiding requires clear sentences and understandable concepts. With verbal guiding you can give the learner a general picture and guide to the beginning of the movement. Throughout the movement the guider gives short and simple instructions and commands. After the performance the guider gives motivational and instructional feedback. Manual guiding is when the learner is manually assisted during the movement or demanded to perform the movement the way it has been instructed to avoid failure. Manual guidance should be stopped when the confidence and level of the learner increases so that the learner don't become dependent on guide. (Talvitie & Karppi, 1999)

Guidance that stimulates different senses is proven to be the most effective way of guidance. It has been estimated that patients can remember up to 75 percent of visual guidance and only 10 percent of verbal guidance. According to a study, visual feedback gives more valuable feedback of their performance than manual guiding. (Kynge et al. 2007, 73)

3.4 Ergonomic Patient Handling Card®

Ergonomic patient handling card® is a training program developed for professionals in the social and healthcare fields. The training program has been developed by Finnish institute of occupational health together with the network of healthcare professionals in the patient transferring. The program has received the support of ministry of social affairs and health. In the end of 2013, 2500 healthcare professionals had received the Ergonomic patient-handling card®. (Työterveyslaitos,19.12.2013)

The Ergonomic patient handling card® aims to increase the work- and patient safety by developing functional patient transferring methods. These methods are based on research data and they support the patient activity. All the methods are based to support the natural movement patterns of the patient, biomechanical principles. The workload can be minimized by using correct assisting postures, taking into account the environment and using correct assistive aids. (Tamminen-Peter & Fagerström 2012, 42-43)

4 PATIENT TRANSFERRING AND MANUAL HANDLING

The description of patient transferring is a work task where the patient is transferred from place to another or repositioned from one position to another by the assistance of a healthcare professional. Examples are when patient is transferred from bed to wheelchair or from side laying to another side. During patient transferring main part of the patients body weight is on the surfaces and healthcare professional supports only part of it. Manual handling refers when transferring any kind of burden by lifting, lowering, pulling, pushing or rolling by using muscle force. (Tamminen-Peter 2005, 11)

”Occasionally the complaint is made that a nurse has injured her back or strained herself in some way in moving a patient. This will generally be because she has failed to do the lifting properly.”(Hampton, 1898, p102). The patient transferring techniques and the teaching of it has come a long way since 1898. Even now the

“lifting properly” is controversial and professionals don’t share the same view of what is the right lifting technique in each situation. (Nelson 2005, 5).

4.1 Controversial transferring and manual handling techniques

The healthcare field in itself can be very loading, but the patient transferring and manual handling is seen to be physically the most demanding part of it. Several traditional manual handling techniques are controversial. They have been proven to be overly straining by researches and by specialist of the field. (Marras, Davis, Kirking, & Berthsche, 1999). Controversial transferring techniques restrict the patient’s own participation. These controversial transferring and manual handling methods were still taught during early 21st century, and that is the reason why they are still being implemented in Finland. (Rantsi, 2005)

4.1.1 Draglift

One controversial manual handling technique is called draglift (Picture 1) or in some cases the chicken lift. The draglift has been used for transferring patient from bed to chair, lifting a patient up from the floor after falling and in repositioning the patient. In this technique one or two healthcare professionals are lifting the patient from patients armpits. This technique has been proven to be very uncomfortable and painful for patient and inefficient for the healthcare professional. For the neurological patient this lifting technique may cause soft tissue damages in the shoulder area. In the 1990 the technique was measured to be biomechanically straining the intervertebral disc. The risk factor of this handling technique is that the healthcare professionals are using only their lifting force and the load is taken at a distance from the spine. (Purdy, B. 2006, 5) ,(Tamminen-Peter & Wickström 2013, 59).



Picture1. Draglift. (Tamminen-Peter, 2005, 60)

4.1.2 One-Person pivot transfer

Another controversial transferring and manual handling technique is one-person pivot transfer (Picture 2). The healthcare professional is in the front of the patient and supporting the patient legs with their own knees, usually involving patient arms around the healthcare professionals neck, shoulder or waist. The patient is participating in this by pulling with their hands. This poses high risk of injury to the workers neck and upper back if the patient fails to bear the weight. The patient should never place their arms around the healthcare professionals neck. This lifting technique has proven to be more dangerous than other techniques that include manually lifting. (Purdy, B. 2006,15-19), (Tamminen-Peter& Wickström 2013, 59).



Picture2. One-person pivot transfer. (Tamminen-Peter, 2005, 60)

4.1.3 Orthodox transfer

An orthodox transfer technique (Picture 3) involves two employees standing on both sides of the patient. The healthcare professionals are assisting the patient by holding from the back and under the tights and then the patient is being lifted. The transferring force is coming directly from the healthcare professionals muscle force and the patient is passive at the moment. This controversial lifting technique has proven to be dangerous for the patient. There are multiple risk factors, some of them are: the patients head and limbs are not supported, the entire body weight is lifted at once and the patient could easily be dropped, the patients skin may be dragged or pulled while lifted. For the healthcare professional this lifting technique involves stress on the spine because the lifting takes place in a stooped position and usually twisting is involved. (Purdy, B. 2006), (Tamminen-Peter & Wickström 2013). The Royal College of Nursing stated the orthodox lift was the second leading cause of injury for nurses. (Lloyd, Fletcher, Holmes, Tartling & Tracy 1998)



Picture 3. Orthodox transfer. (Tamminen-Peter, 2005, 60)

4.2 New transferring techniques and methods

The development of new patient transferring techniques to minimize the physical loading among healthcare professionals has been ongoing process since 1900s. The description of safe patient transferring has come more understandable because of the knowledge of biomechanics. During the patients transferring it is recommended to use the mechanical lifts and involve the patient by other assistive aids to avoid lifting. The recent information is based on the Durawall and the Kinaesthesia methods. These methods have measured to be less loading and more patient friendly. Du-

rawall-method and kinaesthesia method are the most commonly educated methods in Finland. Durawall-method has been taught from the end of 1980s. Approximately 2500 healthcare professionals have received the Durawall-method education in Finland. Kinaesthesia has spread particularly to Switzerland and to Germany and recently to Austria and Italy. In Finland Kinaesthesia base education started in the 1997s, in seven years 1000 nurses and physiotherapist had received the education. (Tamminen-Peter 2005, 60)

4.2.1 Durawall method

Durawall-method is manual handling and transferring technique that was created in Sweden in the 1970s by Kurt Durawall. Durawall added new elements into old manual handling and transferring techniques. These elements are based on the Japanese self-defence techniques called jiu-jitsu. It is a soft method where using the least amount of force aims to receive the most available effect without causing harm or pain. At first this technique was used in violence situations to face an aggressive patient. Later it was modified into transferring techniques. These techniques concentrate in respecting the patient feelings during the handling and transferring. It has 10 principles that are applied depending on transferring situation, environment and the individuals.

1. Instead of lifting, the patient is pulled, pushed or slide on the surface. When possible.
2. It is recommended to use mechanical assistive aids for manual lifting
3. To ease the sliding by reducing friction to its minimum between the patient and the surface is done by using a pillow, hands or any other sliding materials
4. The patient is transferred little by little
5. All rotations and bending positions are avoided when assisting the patient in transferring
6. The caregiver works in gait stance as close as possible to the patient with his/hers back and arms straight.
7. The assisting is performed calmly and harmonically by using basic moving patterns.

8. The force needed for transferring the patient is created by weight shifting and during the transfers you move with the patient. Leverage and motion energy are used in assisting the patient.
9. The patient is touched by a broad, soft and moving palm grip. This way the use of excessive force is avoided. A gentle grip is also used when handling assistive aids. The patient is mainly assisted from the body, not from the arms or the legs. The head, armpits, inner thighs or the genital area should not be touched at all.
10. When assisting the patient the aim is to interact with clear demands and by always facing the patient. (Tamminen-Peter 2005, 61)

4.2.2 Kinesthetic method

Kinaesthetic-term is formed from the following words “kinesis” meaning motion and “aesthetis” meaning sensory. (SuomenKinestetiikka yhdistys Ry. 2014). Kinaesthetic is a approach that applies ergonomical resources to ease the physical loading. It is not a single patient transferring technique even though it is applied when assisting the patient in activity. The method aims to produce knowledge to healthcare professionals in a holistic way of understanding natural movement patterns and the meaning of it in human life. (Hantikainen, 2009)

The main principle in the kinaesthetic method is to utilize the patient’s own optimal resources when assisting them. The meaning of touch and interaction through movement are emphasized when the patient is sensing the movement or orientation and information. Also in kinaesthetics the patient should not be assisted from certain body parts because it limits patient’s ability to freely shift the body weight from one part to another. These certain body parts are neck, shoulder joints, waist, and hip joints. (Tamminen-Peter et al. 2013, 62)

Kinaesthetic supports the human in all daily activity that the person experiences the activity meaningful and is able to participation in the activity in spite of their illness or disability. (Suomen Kinestetiikkayhdistys Ry, 2014)

5 ASSISTIVE AIDS

Assistive aid is an instrument/tool, which improves or maintains person's functional ability or participation when they have been affected by illness or by aging. Appropriate assistive aid is a conventional part of patient's life. Assistive aid enables participation in different life events and supports the patient in management of daily living. (Terveyden ja hyvinvoinnin laitos, 2014)

5.1 Patient mechanical lifter

Patient lifters can be categorized by their features into standing assistive lifts, ceiling lifts and floor-based sling lifts that are movable on the floor.

Powered mobile stand assistive lift supports the standing position, promotes the rehabilitation aspect and patients activity during transferring. The following should be used with patients that have too little strength in the lower limbs to support him or her during transferring. And with patients whose participation is limited and require two health care professionals during transferring. (Työterveyslaitos, 05.11.2013)

Powered Floor-based lift with sling/ lifting line or straps which are movable on the floor are recommended to be used with passive patients whose own participation during transferring is very limited. Very limited meaning, they are not able to bear weight on their lower limbs or assist transferring with their upper body. Floor-base lifters are used with patients that require more assistance than the patient assisted with stand assistive lift. Floor-base lifts are recommend to be used in cases when the patient is assisted from the floor and the strength of their lower limbs is not enough to push their selves to a standing position. The sling/lifting line for the lifter is chosen by the patient activity and body control, if the activity level is high the sling/lifting line is smaller/lower. Powered Ceiling lifts are recommended to be use with the same patient group as floor-based lifters. Some of the benefits of ceiling lifts are that they are easily available, they don't take space in the patients room and they are easy and light to operate. The restrictions in ceiling lifts are that they only can be operated through the rails in the ceiling. The ceiling rails can be straight, curved or the shape of H. The H shape rail is the most efficient and most ergonomical, because

it enables different kind of patient transferring situations. (Water, Nelson, Hughes, & Menzel 2009,), (Työterveyslaitos, 05.11.2013).

The usage of mechanical patient lifts lowers the physical loading of patient transferring and handling situations. Physically loading working tasks for example moving patient legs on the mechanical lifts footboard can be eased by ergonomical guidance. The usage of mechanical patient lifts is recommended if the patient is not able to bare weight on their limbs or if the physical loading for the healthcare professional is too high. (Työterveyslaitos, 05.11.2013)

5.2 Transfer assistive devices for safe handling of patients

Transfer assistive devices are non-mechanical devices, which can reduce the forces or awkward postures associated with patient transferring and handling. When properly selected and used, these devices may help reduce the risk of musculoskeletal injury to healthcare professionals. (Transfer Assist Devices for the Safer Handling of Patients). Transfer assistive aids can be used in patient transferring to provide support, bare the weigh of the patient, reduce friction, prevent patient from sliding and ease to get hold of the patient. (Työterveyslaitos, 05.11.2013)

6 RESEARCH

6.1 The purpose of my thesis

The aim of my thesis was to research information of the role that physiotherapists have in ergonomical guidance of healthcare professionals in patient transferring and manual handling. I also wanted to concentrate on physiotherapeutic guiding methods and their professional skills in ergonomics. In addition I wanted to find out how big of a role ergonomically guidance was in their overall workload.

6.2 Research method

The aim was to implement my thesis as quantitative research. Quantitative research method is based on showing the results in numbers and percentages. The research is aiming to reveal the result as phenomenon, which can be generalized. The results are organized by numbers and usually demonstrated with charts and tables. The information for quantitative studies is collected from different statistics or with structured questionnaires. The results are usually tried to generalize to a bigger population. (Heikkilä 1998, 16). I collected the data from a questionnaire (see APPENDIX1) that I created for this study. I decided to collect the data through quantitative research even though the sampling size was quite narrow. I chose the quantitative research because I wanted to present a general picture of the subject. Other aspects for choosing this research method was my limited time.

6.2.1 Data collection and participants

The process started by contacting the department manager by e-mail and asking if physiotherapist working in their departments could participate in a thesis study. The following email described my personal information; phone number, field of study and the school. It also included the aim of the study and a short description of the questionnaire. If the response was positive there was another email sent to the managers or the physiotherapist. The second email included my personal information, the aim of the study, how to respond to the questionnaire, the time limit and direct link to the questionnaire. In the email I highlighted that all the respondents would be anonymous and they would not have to share any patient information. In my questionnaire I gave all the respondents a week to respond to the questionnaire. All in all I kept the E-form open from 25th of March until 11th of April to receive enough data to analyze.

The plan for the distribution of the questionnaire was to receive the e-mail contact list of all the physiotherapist of the institution from the department manager. But like it often goes, the distribution didn't go according to my plans. From the institutions

behalf the physiotherapists willing to participate in the study contacted me and therefore it was impossible to count the participant rate on this study.

The requirements for the participants were that they had to be qualified physiotherapist and at the moment working on the field. I contacted (21) different institutions in various fields of physiotherapy and received (7) positive answers. The institutions were located in the area of Helsinki, Espoo and Pori. All together there were 22 questionnaires participating in the study and after revising the data one was excluded because I didn't fill the requirements.

6.2.2 Questionnaire

Questionnaire is a valuable method of collecting data of phenomenal targeting societies, human activities, opinions, values and attitudes. In the questionnaire the researcher present the questions to the target group through the questionnaire. (Vehkalahti 2008, 11.) In general questionnaire is part of quantitative research, where statistical methods are applied. The research data consists measured values or numbers. Even the questions are asked verbally, the measurements are presented in numbers. (Vehkalahti 2008, 12.)

The questionnaire (see APPENDIX1) was created with E-form and the link was send to the participants. With E-form the participant are able to save the answer directly to that link and still maintain anonymous. The questionnaire consists of eleven questions. Eight of the questions are close-ended questions and three are open format questions. In the research questionnaire I have used five stage Likert-scale in one question and one question was visualized with black and white pictures. The questionnaire is divided in three main categories; personal information and work experience, ergonomical guidance of caregivers and physiotherapeutic skills and patient transferring techniques.

The first category includes questions 1-3 and it includes the general information of the respondent; Age, work experience and career specialization. Question 1 is closed format question where you only have one option and questions 2-3 are open format question in which you are free to write your answer in. The second category re-

searches information of ergonomical guiding of caregivers; teaching methods and ways. It includes questions 4-8 which are all close-ended questions. The last category consists of personal physiotherapeutic skills and techniques including questions 9-11. Two of these are close ended and the number 11 is open format question. The questionnaire was created mainly in the purpose of collecting quantitative data, but I wanted to add the option for the respondents to add their own answers and comment to create also qualitative data. In questions 5-8 there are comments boxes where respondents are free to leave their responses and comments. The question number 11 was only created to collect qualitative data, because I wanted to receive the experiences of the studied phenomenon in their own words.

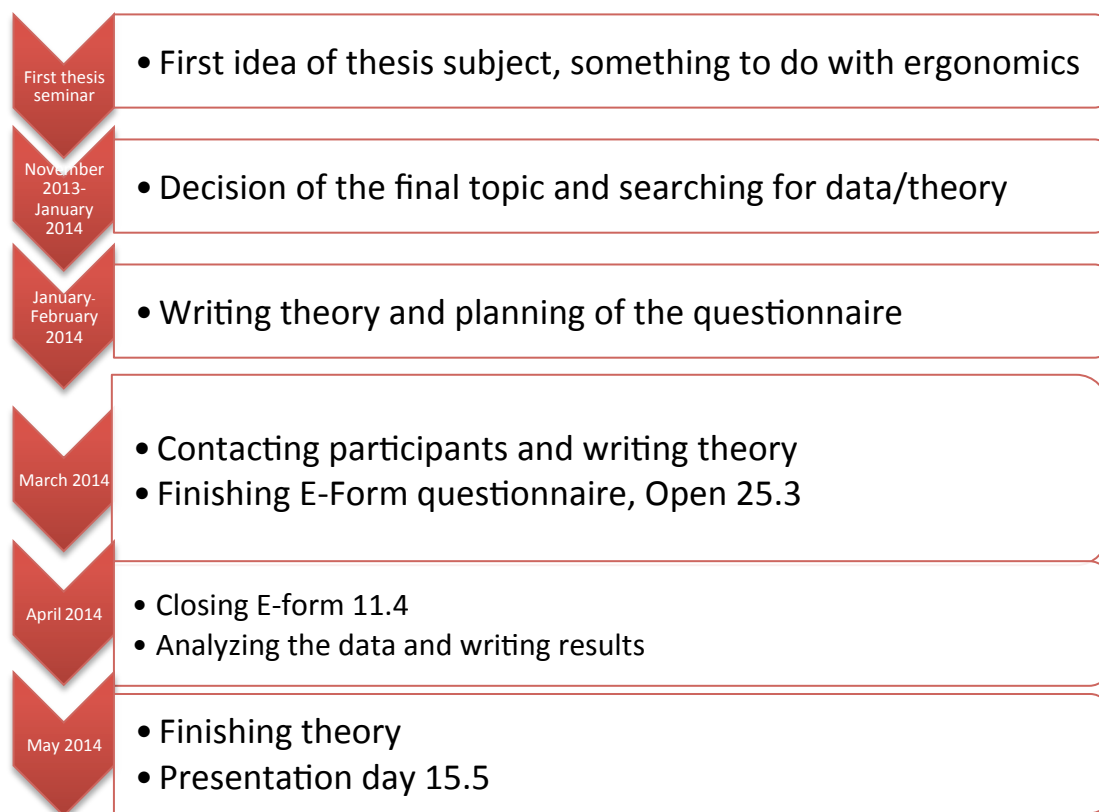
Questionnaire should always be tested before sending it to the participants. Pilot testing the questionnaire is when the test is actually implemented in a group of people not only commented. (Vilkka 2007, 78) In Pilot testing of questionnaires aims to find information of the functionality of the questionnaire. Functionality means the understandability and clarity of it. In pilot testing the participants can provide feedback of the structure, clarity and about the questions. The pilot testing of the questionnaire was implemented in the beginning of March 2014. Three physiotherapist and two physiotherapy students' participated in the pretesting. According to (Vilkka 2007, 78) colleges are good participants in pilot testing. Based on the constructive feedback I made few changes in my questionnaire.

6.3 Analyzing the data

According to (Vilkka 2007,105) quantitative research has three stages in the process of analyzing the data. The following are inspecting the questionnaires, transforming the data into a form that it can be addressed numerable and revising the saved data. First I looked through all the questionnaires and deleted the ones that had been answered inappropriately. The next step was to transfer the data from the E-Form directly to Excel. In Excel I edited/restructured the data into datamatrix that it could be recognized and analyzed by the program Tixel. The last step was to revise the datamatrix to make sure there were no mistakes. According to (Vilkka 2007, 108) the researcher have two options when assessing some missing data; either to include the

questionnaires with missing data into the research and analyze them as a group or to exclude them from the research. I decided to keep the questionnaires in my thesis research because my participant group was quite narrow.

7 PROCESS OF THESIS



Picture 4. Process of thesis.

8 RESULTS

There were 21 participants in this study. All 21 answered on the first and the third category, but three of them did not answer on the questions in category two. This is do to the reason that ergonomical guidance of a healthcare professional was not part of their job, and they were instructed to continue straight to category three.

8.1 Background information

From the 21 participants all were female. The average years of work experience was 8,4 years. Over half of the physiotherapists (62%) work in geriatric physiotherapy, 10% in Neurological physiotherapy with mentally disabled patients, 9% in Neurological physiotherapy, 5% in Neurological Paediatric physiotherapy and 14 % did not determine their speciality (Chart1).

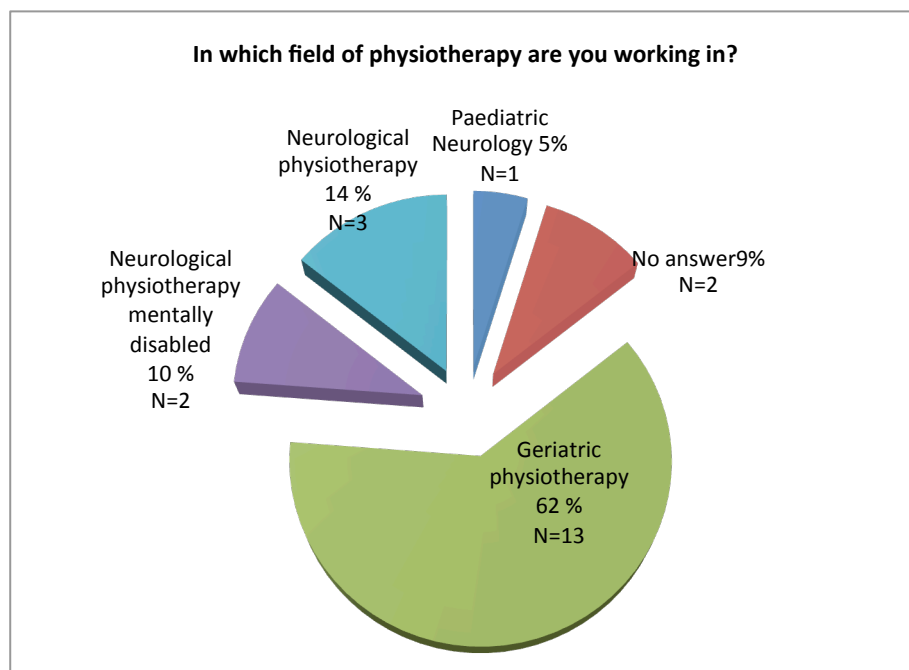


Chart 1. Physiotherapeutic areas. N=21

8.2 Ergonomical guidance of healthcare professional

From the 21 participant 86% stated that the ergonomical guidance of the health care professionals was part of their job and 14% answered that the ergonomical guidance of healthcare professionals is not included in their work picture.

8.2.1 Situations where ergonomical guidance is needed

The thesis study showed that physiotherapists are more likely to guide patient transferring and manual handling to a healthcare professional when the situation would require it and when the healthcare professionals would ask for it. Exactly half (50%)

would hold lecture and seminars. 11% of the 18 participants would teach ergonomics in some other situations (Chart2):

“Guiding ergonomics to the family member of the patients”

“In case when there was a new patient arriving and they required assistance of the healthcare professional”

“Writing the description on the patient record system for the other healthcare professionals to see”

“Part of my job is to teach ergonomics to the healthcare professionals (lectures and practical training) But I also guide and instruct healthcare professionals in real patient transferring situations”.

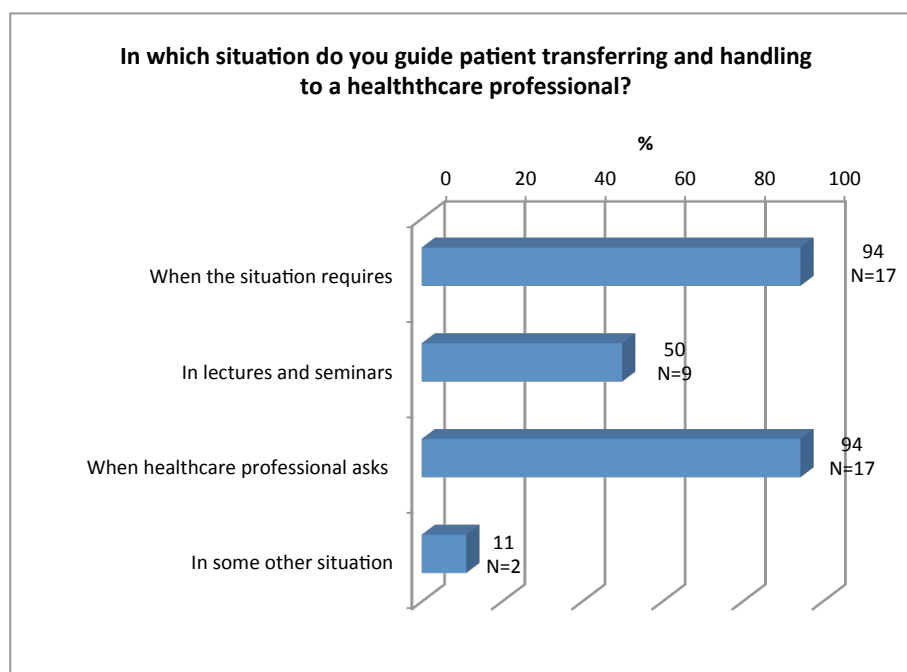


Chart 2. Situations physiotherapists guide transferring and handling techniques to healthcare professionals. (N=18)

8.2.2 Guiding Methods

Based on the results the most common teaching method in ergonomics among the participating physiotherapists was guiding the healthcare professionals by demonstrating the transferring (100%), the next common (94%) method was to guide the healthcare professional by practicing together the transferring and handling methods.

84% of them would guide the healthcare professional verbally. And only 28% would teach them based on theory material handed out to them. None of the physiotherapists answered that they would use some other teaching method. As seen in the charts, physiotherapists were more likely to use more than one teaching method when guiding ergonomics (Chart3).

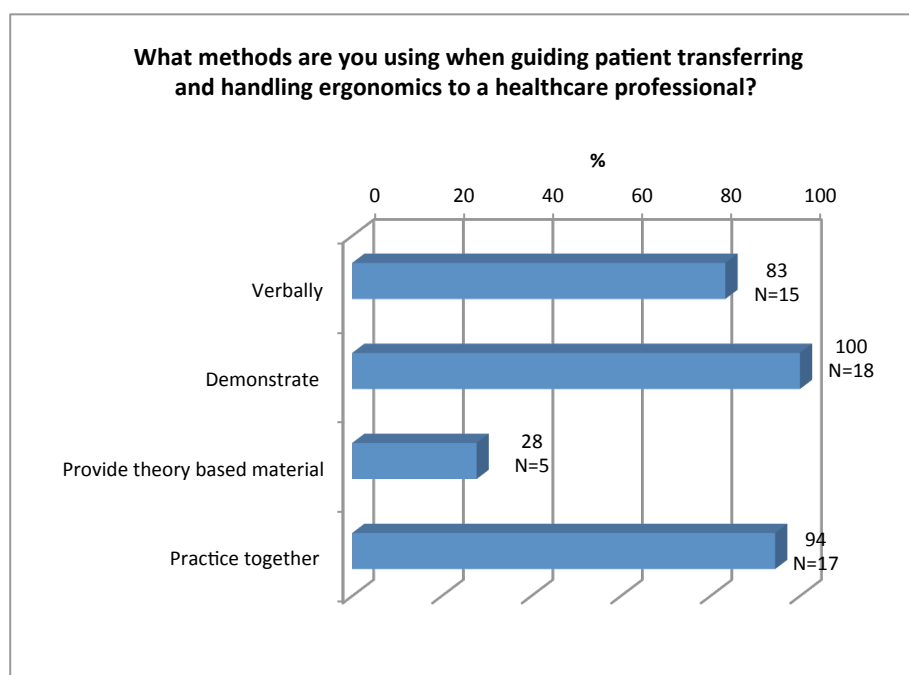


Chart 3. Teaching methods when guiding ergonomics to healthcare professionals.

(N=18)

8.2.3 Controversial Patient transferring and manual handling methods

The aim of this question was to determine if physiotherapists working in the field were still guiding controversial patient transferring techniques. These pictures were black and white and illustrated the following techniques: Draglift (picture1), One-pivot transfer (Picture 2) and Orthodox transferring (Picture 3). All the following patient transferring and handling techniques are controversial and have been proven to be overly straining for the healthcare professional. (See more information chapter 4.1).

The results show that half (50%) of the physiotherapists would not use these techniques. A rather low percentage 17% would guide healthcare professional to use the

techniques shown in the picture 2 and 3. Only 6% would guide the transferring technique shown in picture 1. A quite high percentage 33% did not answer to this question (Chart4). The low response rate on this particular question might be due to some technical difficulties with the pictures on the survey. 3 (15,7%) Participants left a comment on the comment box where they informed that they could not see the pictures and therefore they couldn't answer.

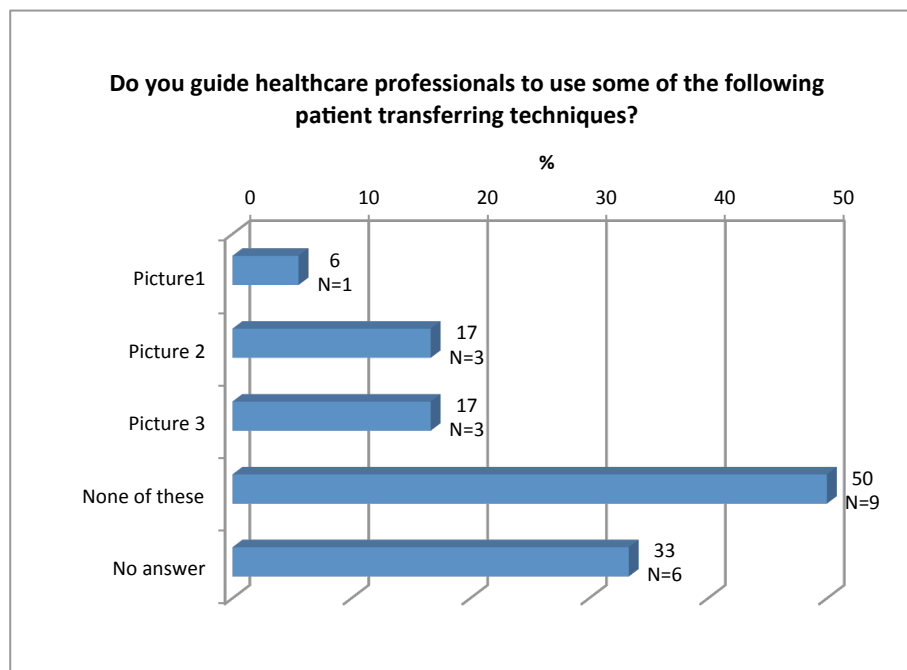


Chart 4. Do you guide healthcare professionals to use some of the following patient transferring techniques? (N=18)

8.3 Physiotherapeutic skills and patient transferring and manual handling methods

All of the physiotherapists who answered the question thought that understanding biomechanics is a key element when guiding ergonomics.

8.3.1 Ergonomical patient transferring courses

From the 21 physiotherapists over half of them (57%) had not participated in any ergonomical patient transferring courses. The results revealed that the most commonly participated program was Ergonomic patient handling card® (19%). The next com-

mon was Kinaesthetic (14%). From the participants none had participated in Durawell method course. 10% of the participants had education from both Kinaesthetic and Ergonomic patient handling card® (Chart5). None of the physiotherapists answered that they had participated in some other patient transferring course than those listed in the Chart5.

In addition 4 out of 21 participants commented their answer on the blank comment box. In three of those answers there was the same outcome; they explained the reason why they had not participated in the following ergonomical patient transferring courses.

“I have recently started working in this department, in which ergonomical guidance is much higher than in my previous job. I have not had time to participate in any ergonomical guidance courses. My knowledge of ergonomics is based on my education (physiotherapist and practical nurse) and I have participated in some course arranged by my workplace”.

“ I have not participated, but I am going to be able to participate in Ergonomic patient handling card® soon. I have been studying Kinaesthetic my own and with the support of my colleagues. Durawall was the only method I was familiar with from my degree in physiotherapy”.

“I am interested in participating in some ergonomical training course, but previously I have not given this opportunity. In my degree of physiotherapy there was only one free elective course on ergonomics. So my ergonomical knowledge is very weak”.

“I am official patient handling card instructor for Finnish institution of occupational health, part of my job is to instruct these courses in my work”.

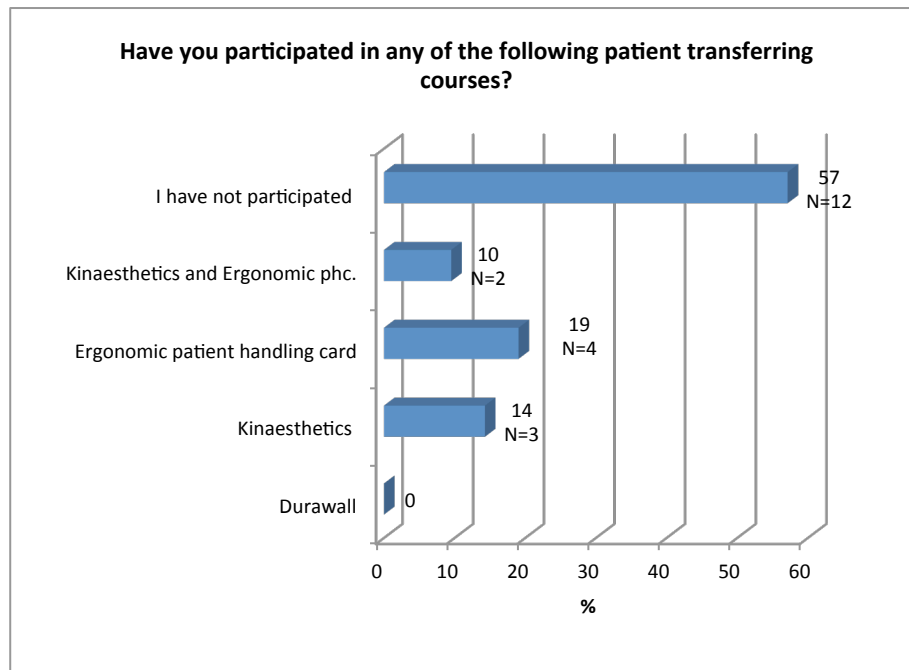


Chart 5. Have you participated in any of the following patient transferring courses? (N=21)

8.3.2 Self-assessment of physiotherapeutic qualification

As seen in the Chart 6 after graduation almost half 43% of the physiotherapist felt as they were “quite badly qualified” to guide healthcare professionals in ergonomics. 29% answered that they were “not at all qualified”. But 24% felt as they were “quite qualified” and 5% said that they “can’t tell” and no one said that they were “extremely qualified”.

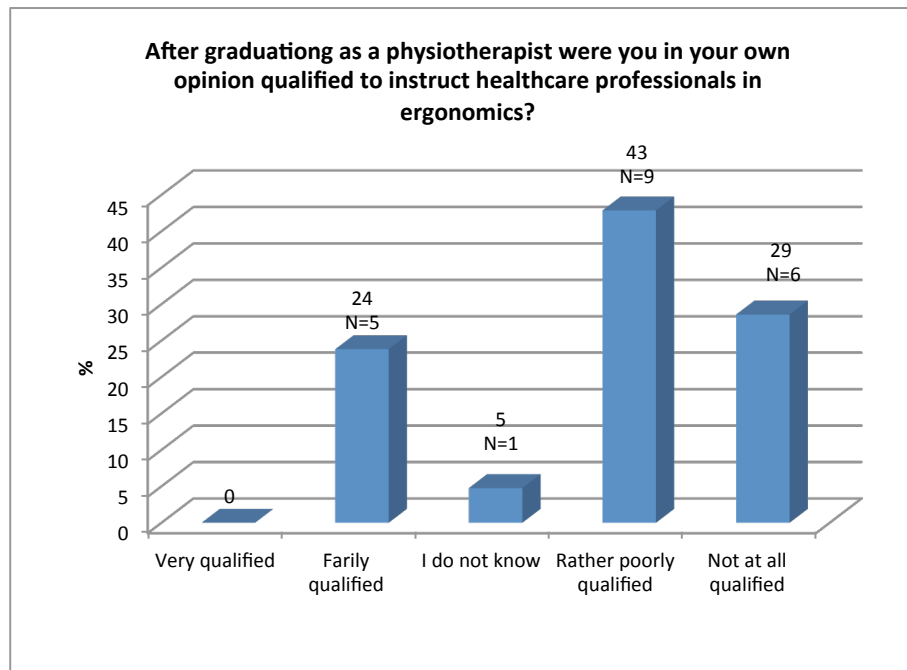


Chart 6. After graduating as a physiotherapist were you in your own opinions qualified to instruct healthcare professionals in ergonomics? (N=21)

8.3.3 Ergonomical guidance in physiotherapy

The last question was an open format question; the physiotherapists were instructed to describe in their own words how big part of their job is guiding ergonomics. From the answers I was able to recognize great amount of similarities. Based on the answers I created (Chart 7) to represent the answers. Over half (57%) of the physiotherapists described ergonomical guidance to be 1/3 or more of their job and for it to be needed daily or weekly. One third (29%) of physiotherapist answered that ergonomical guiding is not very big part of their job. 9% did not answer to this question and the 5% said that the amount of ergonomical guidance is comparable to the turnover of the workforce. Important facts that I was able to analyse from the open format questions results were that in some work environments the occupational physiotherapist handles the ergonomical guidance rather than the physiotherapists. In (9,5%) cases the healthcare professionals had such a good transferring and handling skills, the physiotherapists were not required to guide ergonomics. And one similar issue among the answers was that there were not enough resources and time to guide healthcare professionals in ergonomics. Some physiotherapist described the guiding to be unpredictable and momentary.

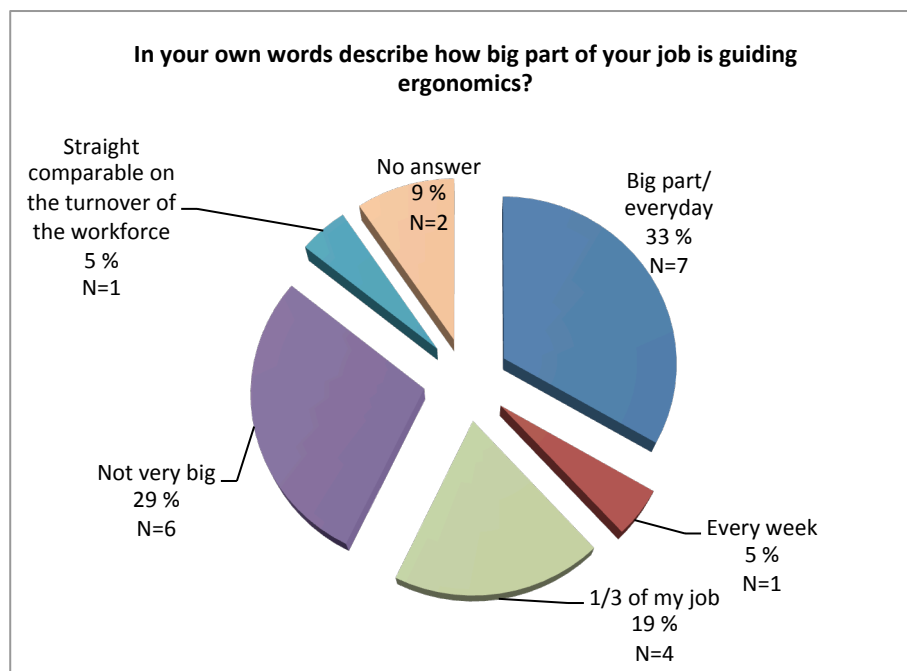


Chart 7. In your own words describe how big part of your job is guiding ergonomics?

9 CONCLUSION

9.1 Research results

The participating physiotherapists were from the areas of Geriatric physiotherapy and neurological physiotherapy. The results in my study showed that a significant percentage of participating physiotherapists (86%) do guide healthcare professionals in ergonomics.

Physiotherapists who would guide ergonomics to healthcare professionals attend to use several different guiding methods but most commonly they would demonstrate the transferring method and then next most common answer was that they would practice the transferring techniques together. These results from my study can be assimilated to published information which describes the following; “to achieve the best transferring and handling techniques requires observation and experience of assisting transferring”. (Tamminen-Peter & Wickström 2013,82). And according to Kyngäs (2007, 73) guidance that stimulates different senses is proven to be the most

effective way of guiding. The participants would most commonly guide ergonomics to a healthcare professional when they asked for it and when the situation required. Also 11% added some other situations in their own words. Something that I found to be surprising was that 50% the physiotherapists who guided ergonomics would hold lectures and seminars, which was a higher amount than I expected. Half of the physiotherapist would not guide the controversial transferring techniques to a healthcare professional, but almost every fifth still would. This shows that there are physiotherapists working on the field who have out-dated information. This can be related to Rantsi (2005): “the controversial patient transferring and manual handling methods were still taught in the beginning of 2000 century”. From Chart 4 it can be seen that the physiotherapists who would guide controversial transferring methods would most likely guide more than one of the following pictures. Unfortunately there were some difficulties with the pictures and it could be said that therefore the valuable data of the transferring situation was very narrow.

Over half of the physiotherapists had not received additional education from any ergonomical patient transferring courses. According to Tamminen-Peter (2005) the durawall method and kinaesthesia method are the most commonly educated methods in Finland. This information could not be administered on the result on my study because in my study the most commonly participated course was the Ergonomical patient transferring course. The participating physiotherapists evaluated their qualification as an ergonomical instructor after graduation to be quite low: almost half answered that they were rather poorly qualified and every third evaluated themselves as not qualified at all. This result can be assimilated to the findings of Rindfleisch in his ground-theory investigation. In his article (2009) he describes the following; “physical therapists have little formal training in educating patients. When surveyed, many therapists reported having received little or no training in patient education strategies during their entry-level professional programs”. The participating physiotherapists came from three different cities and it could be said that the poor qualification was not targeted in any certain area. Ergonomical guidance was described to be a big part of physiotherapists job. From the participating physiotherapists more than a half said ergonomical guidance is at least a third of their job and is needed daily or weekly. Every third physiotherapist experienced that ergonomical guidance was not a big

part of her job. Some other similarities were described to be: lack of time in ergonomical guidance and the unpredictability of guiding situations.

9.2 Discussion

The aim for my study was to get participants from several different areas of physiotherapy. One goal was to get a minimum of one big hospital to participate, because it would have given me valuable data to analyse. Unfortunately for this research it was not possible because it would have had to file for research permission, which in this research I didn't have the time to do so. The questionnaire was sent to institution where all the areas of physiotherapy were represented but I only got answers from neurological and geriatric areas.

From the research results the surprising facts for me were that seven out of ten of the physiotherapists evaluated their ergonomical guiding skills to be rather poor or not at all qualified, but still over half had not participated in any additional ergonomical courses. Comparing these results makes me question; where did the physiotherapists receive the knowledge to teach ergonomics? Taking into consideration that seven out of ten answered that they were not qualified to guide ergonomics after graduation. Could this suggest to us that physiotherapist are expected to know more about ergonomics that they actually do? Or are they just insecure about their qualification after graduation?

From the qualitative results it could be interpret that there are physiotherapist working on the field and guiding ergonomics that are experiencing that they don't have enough skills to do so. Another observation I made was that the ergonomical guidance of a healthcare professional was not a part of particular physiotherapists job because the healthcare professionals in their work environment had such a good skills in patient transferring and handling. In both situations the healthcare professionals had received additional education in ergonomics but the physiotherapist had not. In these cases, are the physiotherapists qualified to guide ergonomics if the healthcare professionals had more specific education than the physiotherapists?

Based on these results and my own experience my suggestion is that it would be beneficial to include the ergonomical patient transferring card into the studies of physiotherapy. Perhaps the studies could be free elective, but it would be good from the schools behalf to support physiotherapists in ergonomical guidance.

9.3 Validity and Reliability of research

The aim of the research is to provide reliable and truthful information as possible. When assessing how truthful the research is reliability and validity are both applied (Kananen 2008, 79). In this study, the sample size was relatively small, limiting the ability to apply the results to other settings. A broader sample of physiotherapists from multiple areas may yield different results. The questionnaire was sent to institutions that had physiotherapists from all areas represented, unfortunately there were only neurological and geriatric physiotherapists represented in the study. The institutions were contacted by email and asked to send a contact list of physiotherapists working in their services. In most of these institutions this was not possible; physiotherapists working in the field rather decided if they wanted to participate on the study or not. This may have administered the physiotherapists who were guiding ergonomics as part of their work to participate on the study. For this reason it was impossible to find out the response rate.

The questionnaire was pilot tested and based on the feedback it was modified to be more understandable. The questions had low loss rate and there was only one answer in the Likert scale to describe, "I can't say". One exception was a question of controversial transferring and handling techniques which had rather high loss rate due to the reason that the pictures could not be seen with certain server. The data matrix was analysed based on to (Vilkka 2007,105) three-stage process. And the data was verified to match the questionnaires several times. In the process the small participant group was an advantage. Throughout the process all participants remain anonymous.

My research didn't follow any hypothesis, because this topic has not been researched before. The idea of what the results could be was based on some minor theory information and my own experiences on the field. I managed to create the questionnaire to

equivalent to the theory and to measure the issue I was researching. Based on the result the questionnaire was understandable. Unfortunately the small participant group made it hard to interrelate the results and the results can only be directional. This research showed some valuable data of a topic that has not been studied before and hopefully the suggestions of future research will carry on.

9.4 Suggestions for future thesis

Based on this research there were several ideas of future research that arose during the process. They are suggestions of how my thesis topic could have been measured more specifically or differently. First topic that would be interesting to implement would be a quantitative research on physiotherapeutic teaching methods and their ergonomical skills in the Hospital environment. Therefore the researches could work with few hospitals where there is a good amount of physiotherapists working. And that way there would be more comparison and most likely more data to analyze. But it would be easy to implement the research because the participants would work in a hospital so the result could possible be generalized.

Second suggestion for topic is to implement Qualitative research about the teaching methods and techniques physiotherapist are using. And actually choose a participant group of physiotherapists who do guide ergonomics and observe and analyze their methods and measure the effectiveness of the teaching and include their own opinions and feelings on to the study.

The last suggestion that came to my mind based on the result that I found in my research. The physiotherapist working on the field experienced their qualification in ergonomical guidance after graduation to be very low. Perhaps the research could study the content of ergonomical studies in physiotherapy programs and the reason why physiotherapist are experiencing that they were not qualified. The information from that research could be used to develop the teaching content of the ergonomical studies in physiotherapy programs.

REFERENCES

- Adams, C. (2014a). Ergonomics> what is organizational ergonomics?
<http://ergonomics.about.com/od/ergonomicbasics/f/What-Is-Organizational-Ergonomics.htm>
- Adams, C. (2014b). What is cognitive ergonomics?
<http://ergonomics.about.com/od/ergonomicbasics/f/What-Is-Cognitive-Ergonomics.htm>
- Dul, J., & Weerdmester, B. (Eds.). (2001). Ergonomics for beginners, A quicke reference book (R. E. Vande Putte Trans.). (Second edition 2001 ed.). New York: Taylor& Francis Inc.
- Hampton, I., A. (1989). Nursing its principles and practices. Cleveland:
- Hänninen, O. (2005). Ergonomia terveydenhuollossa. Klaukkala: Recallmed Oy.
- Hantikainen, V. (2009). Luentomateriaali 19. Hattulan kunta. Satu Kananen, 2009.
- Heikkilä, T. (1998). Tilastollinen tutkimus. Helsinki: Edita.
- International Association of Ergonomics. (2014). What is ergonomics?>Definition and domains of ergonomics.<http://www.iea.cc/whats/index.html>
- Kananen, J. (2008). Kvantti kvantitatiivinen tutkimus alusta loppuun. Jyväskylä: JYVÄSKYLÄN AMMATTIKORKEAKOULU.
- Kukkonen, R. (2001). Työfysioterapia : Yhteistyötä työ- ja toimintakyvyn hyväksi (painos 2 ed.). Helsinki: Työterveyslaitos.
- Kyngäs, H., Kääriäinen, M., Poskiparta, M., Johansson, K., Hirvonen, E., & Renfors, T. (2007). Ohjaaminen hoitotyössä. Helsinki: WSOY. Helsinki: Sanoma Pro Oy.
- Larson, B., & Miller, M. (2005). Professional guidelines in occupational health and ergonomics. Rehabilitation ergonomics (173-177). USA: Isernhagen Work Systems, Inc.
- Lloyd, P., Fletcher, B., Holmes, D., Tartling, C., & Tracy, M. (1998). The guide to the handling of patients. National back pain association. (4th ed.). Royal College of Nursing.
- Marras, W., Davis, K., Kirking, B., & Berthsche, P. (1999). A comprehensive analysis of low-back disorder risk ans spinal loading during the transferring and repositioning of patients using different techniques.Ergonomics 42(no 7), 904-926.
- Nelson, A. L. (2005). Safe patient handling and movement : A guide for nurses and other health care providers. New York: Springer Publishing Company.

- Nelson, A. L., Motacki, K., & Manzel, N. N. (2009). The illustrated guide to safe patient handling and movement. New York: Springer Publishing Company.
- Parantainen, A., & Laine, M. (2010). Työterveys ja turvallisuus sosiaali- ja terveysalalla 2000-luvulla, sosiaali- ja terveysalan riskiprofiili (työterveyslaitos).
- Purdy, B. Workers' Compensation Board. (2006). High-risk manual handling of patients in healthcare.
- Rantsi, H. (Helsinki 2005). Potilaan liikkumisen avustus- ja siirtomenetelmien opetus sosiaali- ja terveysalan oppilaitoksissa. Selvityksiä 2005:26 Sosiaali- Ja Terveysministeriö.
- Rindfleisch, A. B. (2009). A grounded-theory investigation of patient education in physical therapy practice. *Physiotherapy Theory and Practice*(25:3), 193-202.
- Suomen Kinestetiikka Yhdistys Ry. Kinestetiikka®, 2014, from <http://www.kinestetiikka.fi>
- Talvitie, U., & Karppi Sirkka-Liisa, M. T. (1999). Fysioterapia. Helsinki: Edita.
- Talvitie, U., Karppi, S., & Mansikkamäki, T. (2006). Fysioterapia (2 painos ed.). Helsinki: Edita Prima.
- Tamminen-Peter Leena, Eloranta Maj-Britt, Kivivirta Marja-Leena, Mämmelä Eija, Salokoski Irma, Ylikangas Arja. (2007). Potilaan siirtymisen ergonominen avustaminen opettajan käsikirja.
- Tamminen-Peter, L. (2005). Hoitajan fyysinen kuormittuminen potilaan siirtymisen avustamisessa: Kolmen siirtomenetelmän vertailu. väitöskirja. (Lääketieteellinen tiedekunta, työterveyslaitos, Turun Yliopisto). , 116.
- Tamminen-Peter, L., & Fägerstöm, V. (2012). Potilassiirtojen ergonomiakortti® turvallisen liikkumisen avuksi. *Fysioterapia*(7/2012), 42-43.
- Tamminen-Peter, L., & Wickstöm, G. (2013). Potilassiirrot, taitava avustaja aktivoi ja auttaa. Helsinki: Työterveyslaitos.
- Terveyden ja hyvinvoinnina laitos. (2014). Apuväline. http://www.thl.fi/fi_FI/web/fi/tutkimus/tyokalut/oppimateriaali/kuntoutusala/apuväline
- The Nurses Load editorial. (1965). *The lancet.*, 422-423.
- Työfysioterapeutit Ry. (2014). Työfysioterapia ammattina. <http://www.tyofysioterapeutit.com/yhdistys.php>
- Työterveyslaitos. (05.11.2013). Ergonomia>Ergonomiaa työelämän eri aloilla>Terveydenhuolto>Potilassiirrot. http://www.ttl.fi/fi/ergonomia/ergonomia_eri_aloille/terveydenhuolto/potilassiirrot/sivut/default.aspx

Työterveyslaitos. (12.03.2012). työterveyshuolto>työterveyshuolto>henkilöstö>työfysioterapeutti.

http://www.ttl.fi/fi/tyoterveyshuolto/ammattihenilot_asiantuntijat/tyofysioterapeutti/Sivut/default.asp

Työterveyslaitos. (19.12.2013). Ergonomia>Ergonomia työelämän eri aloilla>Terveystenhoito>Potilassiirtojen ergonomiankortti.

(http://www.ttl.fi/fi/ergonomia/ergonomia_eri_aloille/terveydenhuolto/ergonomiakortti/sivut/default.aspx)

Työterveyslaitos. (26.06.2013). Ergonomia>Ergonomiaa työelämän eri aloilla>terveydenhuolto.

http://www.ttl.fi/fi/ergonomia/ergonomia_eri_aloille/terveydenhuolto/Sivut/default.aspx

Työterveyslaitos. (26.06.2013). Ergonomia>Mitä ergonomia on?, 2014, from http://www.ttl.fi/fi/ergonomia/mita_ergonomia_on/sivut/default.aspx

Valvira, National Supervisory Authority For Welfare and Health. (2014). Valvira.fi>Licensing>Professional practice rights.

http://www.valvira.fi/en/licensing/professional_practice_rights

Vehkalahti, K. (2008). Kyselytutkimuksen mittarit ja menetelmät. Helsinki: Tammi.

Vehviläinen, H. (2013). Hoitajien apuvälineiden käyttö potilaiden siirtymisen avustamisessa vanhustenhuollossa: Fysioterapeutin tarjoamaa tietoa hoitajien ergonomian edistämiseksi. AMK-opinnäytetyö. (Fysioterapian Koulutusohjelma, Turun Ammattikorkeakoulu).

VIEIRA, R., EDGAR. (2006). Work physical therapy and rehabilitation ergonomics: A review and discussion of the scope of areas, clinical commentary. (Department of Physical Therapy, University of Alberta, Canada). Disability and Rehabilitation, 1563-1566.

Vilka, H. (2007). Tutki ja mittaa, määrällisen tutkimuksen perusteet. Jyväskylä: Tammi.

Waters, T., R., Nelson, A., Hughes, N., & Menzel, N. (2009). Safe patient handling training fro school of nursing (curriculum material).(Publication No. 2009-127)

Workers Compensation Board, British Columbia. Transfer assist devices for the safer handling of patients, A guide for selection and safe use

APPENDIX 1

Esitiedot

Sukupuoli:

- Mies
 Nainen

Työkokemus:

Vuodet/ Yhden desimaalin tarkkuudella

Kuinka monta vuotta olet toiminut fysioterapeuttina?

Millä fysioterapian erikoisalalla työskentelet?

Hoitohenkilökunnan ergonomian ohjaus

Kuuluuko työtehtäviisi hoitohenkilökunnan ergonomian ohjaus potilassiirroissa ja nostoissa? (Jos vastauksesi on Ei, siirry suoraan kohtaan Fysioterapeuttinen osaaminen ja potilassiirtotekniikka)

- Kyllä
 Ei

Missä tilanteissa ohjaat hoitohenkilökunnalle potilassiirtojen ja nostojen ergonomiaa? (Valitse halutessasi useampi vastausvaihtoehto)

- Aina tilanteen vastaan tullessa
 Luennolla ja koulutuksissa
 Hoitohenkilökunnan kysyessä
 Muussa, missä?

Millä keinoin ohjaat hoitohenkilökuntaa potilassiirtojen ja nostojen ergonomiassa? (Valitse halutessasi useampi vastausvaihtoehto)

- Ohjeistan suullisesti
 Näytän mallia
 Annan teoriapohjaista materiaalia
 Harjoittelemme yhdessä potilassiirtoja ja nostoja
 Muu, mikä?

APPEN CIX

Ohjaatko hoito henkilökuntaa käyttämään joitakin seuraavista potilassiirtotekniikoista? Katso alla olevat kuvat ja valitse halutessasi useampi vastausvaihtoehto)

- 1 3
 2 En mitään näistä



1

(Avustettavalla ei ole käytössä nostovyötä)



2



Fysioterapeuttinen osaaminen ja potilassiirtotekniikka

Oletko itse suorittanut jonkin ergonomia/potilassiirtokoulutuksista?(Valitse halutessasi useampi vaihtoehto)

- Durawell
- Kineestetikka
- Potilassiirtoergonomiakortti
- En ole suorittanut
- Muu, mikä?

Valmistuttuasi fysioterapeutiksi olitko mielestäsi päteväsi hoitohenkilökunnan ergonomianohjauksessa?

- Erittäin päteväsi
- Melko päteväsi
- En osaa sanoa
- Melko huonosti päteväsi
- En lainkaan päteväsi

Pidätkö biomekaniikan käsitteiden ymmärtämistä keskeisenä ergonomian ohjauksessa?

- Kyllä
- En

Kuvalle omin sanoin kuinka suuri osa työstäsi on ergonomiohjausta?

Tietojen lähetyk