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**Physiotherapy treatment of whiplash-associated disorders in Sweden
in relation to current scientific evidens
- a questionnaire study**

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**Physiotherapy treatment of whiplash-associated disorders in Sweden
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**Sjukgymnastisk behandling av whiplash-associated disorders i Sverige
i relation till dagens vetenskapliga evidens
- en enkätstudie**

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Abstract

Background: Whiplash injury is an accelerations- and deceleration injury to the neck as a result of traumatic force, for example a motor vehicle accident. This type of injury can result in different bone- and soft tissue injuries. The most common symptoms after a whiplash injury are neck pain and headache. Other symptoms like nausea and dizziness can also occur. The mental health can also be affected. The patients' attitudes towards their ability to be painfree and recover from the symptoms play a vital role in the rehabilitation. As of today there are no clear guidelines in Sweden for how to treat patients with whiplash associated disorders (WAD). **Aim:** The aim of this study was to examine how physiotherapists in health care centers in Sweden treat patients with whiplash-associated disorders in the acute phase and if this is consistent with the evidence found for WAD treatment. **Method:** A questionnaire was used in this study, which was answered by 33 clinically practicing physiotherapists in primary care units in Sweden. **Results:** This study shows that physiotherapists in primary care units in Sweden base their treatment, of patients with WAD, on dependable experience. According to the current scientific evidence the physiotherapists give the patients advice about movement training for the cervical spine and also advice them to return to everyday activities. **Conclusions:** This study shows that physiotherapists often work after to the most effective treatment methods according to current scientific evidens. According to this study the information that the physiotherapists provide their patients in the acute phase is deficient. There should also be more follow ups. We also think that it should be prepared national guidelines for the treatment of patients with WAD, partially so that the patients receives equal treatment regardless of health care providers and also make it easier for caregivers to provide the right treatment.

Sammanfattning

Bakgrund: Whiplash är en accelerations- och deacceleringsmekanism som sker i nacken vid traumatiskt våld, till exempel vid en bilolycka, vilket kan ge upphov till olika ben- och mjukdelsskador. De vanligaste symtomen efter en whiplash skada är nacksmärta samt huvudvärk. Men det kan även förekomma andra symtom som illamående och yrsel. Även den psykiska hälsan kan påverkas. Idag finns det inga klara nationella riktlinjer för behandling av patienter med WAD. **Syfte:** Syftet med denna studie var att ta reda på hur sjukgymnaster på vårdcentraler i Sverige behandlar patienter med Whiplash-Associated disorders (WAD) i det akuta skedet och om detta stämmer överens med den vetenskapliga evidens som finns för WAD-behandling. **Metod:** I denna studie användes en enkät. Den besvarades av 33

sjukgymnaster på vårdcentraler i Sverige. **Resultat:** Enligt denna studie arbetar sjukgymnasterna på vårdcentraler i Sverige till största del enligt beprövad erfarenhet. Enligt dagens evidens ger sjukgymnasterna råd om rörelseträning för cervikal columnna samt att patienten ska så fort som möjligt återgå till sina vardagliga sysselsättningar. **Slutsats:** Efter de svar vi har fått från enkäten kan vi konstatera att sjukgymnaster idag ofta jobbar efter de mest effektiva behandlingsmetoderna enligt dagens vetenskapliga evidens. Dock är den information som sjukgymnasterna ger i det akuta skedet bristande. Dessutom behöver man göra fler uppföljningar av rehabiliteringen. Vi tycker även att det borde sammanställas nationella riktlinjer för behandling av patienter med WAD, dels för att patienterna ska få likvärdig behandling oavsett vårdgivare och dels för att underlätta för vårdgivare att ge rätt behandling.

Key words: WAD, whiplash, physiotherapy, evaluation, questionnaire study

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1. Background

Whiplash injury is an accelerations- and deceleration injury to the neck as a result of traumatic force, for example a motor vehicle accident. This type of injury can give origin to different bone- and soft tissue injuries. Whiplash associated disorder (WAD) is the name for a set of symptoms which may be a result from a whiplash trauma. WAD can be classified according to “The Quebec classification of whiplash-associated disorders” (table 1). This is a gradation in symptoms from zero to four, where zero is “no neck pain, stiffness, or any physical sign” and grade four is “neck complaints and fracture or dislocation, or injury to the spinal cord” [1].

Table 1: Clinical classification of whiplash-associated disorders (WAD) by Quebec Task Force. Other symptoms can be: nausea, dizziness, jaw pain, headaches, hand/arm numbness, difficult concentrating, low back pain and mental illness

Grade 0	no neck pain, stiffness, or any physical signs are noticed
Grade 1	neck complaints of pain, stiffness or tenderness only but no physical signs are noted by the examining physician.
Grade 2	neck complaints and the examining physician finds decreased range of motion and point tenderness in the neck.
Grade 3	neck complaints plus neurological signs such as decreased deep tendon reflexes, weakness and sensory deficits
Grade 4	neck complaints and fracture or dislocation, or injury to the spinal cord

About 60 000 road traffic injuries are reported every year to Swedish insurance company, according to Whiplashkommissionen [2]. Half of them are complains about neck problems. According to the Traffic Accident Board statistics assessed approximately 1500 people every year have a disability of at least 10% after the accident. The Swedish Social Insurance Agency indicates that at least 500 people per year are expected to be totally incapacitated as a result of whiplash associated disorders [2]. According to a report from Norway (fig.1) 3-5 % of people who suffer from vehicle accidents, developed acute symptoms within three days after a car accident. The most common disorders, 80% of 3-5%, were headache and pain/stiffness in the neck. However 95 % of the people in car accidents do not get any symptoms at all [3].

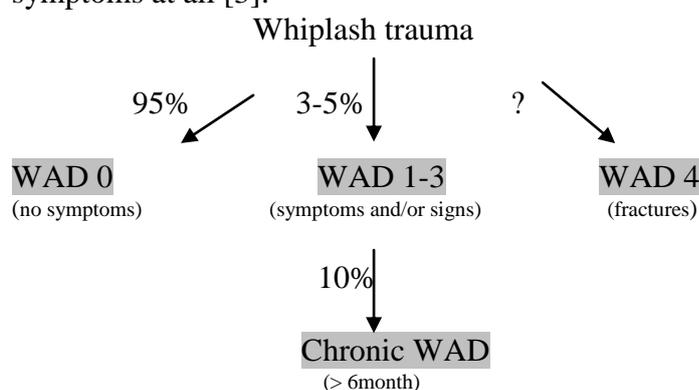


Fig. 1 Breakdown of number of people who suffered whiplash trauma, according to a report from Norway in 2000

After a whiplash trauma the symptoms may be delayed a few hours or even days. The most common symptoms are neck pain (88-100%) and headache (54-66%). But it may also be other symptoms like nausea, dizziness, jaw pain, hand- or arm numbness, difficulty concentrating and low back pain [4, 5]. Although mental health can be affected, one can see that patients with WAD have a reduced quality of life after the injury, compared with the normal population [4].

The patients' attitude about their ability to be free of pain and recover from the symptoms plays a vital role in the rehabilitation. The prognosis looks better if the expectations are positive [6]. To identify those who are at risk to develop long-term WAD, clinicians in the early phase should assess the patient's mental attitude, their expectations to the rehabilitation and their social factors. Those who expect to be better recover three times as fast as those who believe they never will recover [7]. Initially after a whiplash trauma, less than a third of the patients with WAD believe that they will be completely recovered. [6].

It is also important to monitor patients with WAD over time, but research has shown that the time of the follow-up differs. The instance when the patients are free from symptoms is also very individual. As a physiotherapist you should take time for a clinical follow-up instead of just letting the patient fill out a form. Partly because there is no certainty that the patient responds to the form and the physiotherapist also misses the opportunity to update the measurements of pain, range of motion (ROM) and other difficulties [8].

Although many of the patients with WAD grade I-III never develop long-term problems, it is important that they have appropriate and effective physiotherapy from the outset [8]. There are studies showing that early mobilization and physiotherapy exercise after a traumatic neck injury increase rehabilitation opportunities. Those who receive physiotherapy that include active training have less pain after six weeks and after six months, compared with those treated with an immobilized soft collar [9]. Furthermore the patients who are asked to behave as usually after a whiplash accident recover better than those who stay home from work and whose neck is immobilized by a neck collar [8, 9]. This applies pain under daily activities, pain/stiffness in the neck, memory, concentration and headache [8].

To encourage a person with WAD to continue with their everyday life as much as possible is the most important factor in the rehabilitation [8, 9, 10]. It is also important that the person do active movements in the neck to reduce the risk of stiffness, which in itself can lead to pain and insomnia [10]. It has been shown that supervised active training is considerably more favourable than home exercise. Supervised training decreases use of pain medications, the patient experience an improved self-efficacy, decreases fear of movement and reduces pain [11]. However, home exercises can be good for the patient to maintain cervical movement and posture and also learn coping strategies to deal with any disability due to neck injury [8].

Transcutaneous Electrical Nerve Stimulation (TENS), acupuncture, heat, massage, ice and laser are techniques for example pain relief. There is no evidence (the result of systematically gathered and peer-reviewed researches) to suggest these methods are efficient for patients with WAD. However, no evidence suggests that these treatments exacerbate the symptoms [1, 12, 13].

Since there are no clear national guidelines, we hope that this study can illustrate how physiotherapists in different parts of Sweden treat people with WAD and if this is consistent with the current scientific evidence we find. We also want to investigate how the physiotherapist's evaluate the patient's well-being after treatment. WAD is a common

problem, in which research has evolved tremendously over the past ten years. We have chosen to focus on WAD grade I and II because it is often where the physiotherapist is involved.

2. Aim

The aim of this study was to find out how physiotherapists in health care centres in Sweden treat patients with whiplash-associated disorders (WAD) in the acute phase and if this is consistent with the scientific evidence found for WAD treatment. The aim was also to ascertain physiotherapist's perception of patient's quality of life and function after treatment.

3. Questions

To what extent do physiotherapists, in Sweden, work according to scientific evidence?

How is the physiotherapy treatment constructed, for patients with WAD grade I and II in primary care units in Sweden?

What information is given to the patients in the acute phase current the traumatic head injury?

How does the physiotherapist evaluate the treatment outcome according to both function and life quality?

4. Method

4.1 The questionnaire

A questionnaire was used in this study (annex 1, in Sweidsh). The questionnaire was created with the help and design of questionnaire from an old C-uppsats, called Conservative physiotherapy treatment for subacromial inpinchment syndrome in the shoulder – a questionnaire study in the public care in Sweden [14]. The questions from that survey were adjusted to suit this study about WAD and then a sample of the questionnaire was sent out to six primary care units in the south of Sweden. Five of those questionnaires were answered and some of the respondents had also commented on the survey. The questionnaire was adjusted after this, some questions were removed and some were reformulated. The answers from these five physiotherapists were secluded in the final study result.

Eventually the questionnaire contained 26 questions, 15 closed and 11 opened. It was divided in three parts:

- “The physiotherapy treatment” - containing 16 questions,
- “The life quality of the patients” - containing three questions
- “Evaluation” - containing five questions.

The part about “the physiotherapy treatment” was the main part in the survey because it would also become the main part in the study. The treatment needed to be described as specific and accurate as possible to answer our questions and to match the aim of this study. The questionnaire starts with two questions whether about the physiotherapist treats people with WAD and “if no, why not”.

4.2 Procedure

By searching on the Internet all primary care units were found in each city with the help of each counties web page. The university citys, Malmö/Lund, Göteborg and Umeå alone did not have enough primary care units and therefore the whole county had to be selected.

When all primary care units were found, they were all examined to find out wheatear they had a physiotherapist or not. This was mostly done by searching on their web page and if the information was not found, a telephone call was made to ask them in person. When primary care units with physiotherapists were sorted out, each primary care unit got a number and then 20 primary care units were randomly selected per county. This was made by drawing of lots. A total of 100 questionnaires were sent out.

4.3 The study population

The questionnaire was sent to physiotherapists working at primary care units in Sweden. To obtain a geographical distribution five university towns were selected. These were Malmö/Lund, Göteborg, Uppsala, Stockholm and Umeå.

The external dropouts were 54 surveys which mean that 46 were returned. The spread between the counties were as following:

Umeå (Västerbotten): 6 returned surveys

Uppsala: 10 returned surveys

Göteborg (Västra Götaland): 10 returned surveys

Stockholm: 6 returned surveys

Malmö/Lund (Skåne): 14 returned surveys

Out of these 46 surveys 13 surveys were not answered completely and therefore only 33 surveys are presented in this study.

Four answers were excluded from table 2 because their survey was answered incorrectly, for example they had given four firsthand choices.

4.4 Analysis

In this study data was presented with descriptive statistics. Data was presented with tables and figures so that nobody could be identified. The answers from the open questions are categorized to be able to use them in figures. If there were many different answers they are presented as “other” in the figure and then the answers from the category “other” is presented in a table as well.

5. Results

The median for how long the physiotherapists had been in the profession was 16 years, with a range of 2-37 years. The question how long the physiotherapists had worked with patients with WAD was answered by 29 persons. The median number of year was 10 (1-28) years.

5.1 To what extent do physiotherapists, in Sweden, work according to scientific evidence?

It was 25 physiotherapists that used proven experience as a ground for their treatment of patients with WAD and 21 has had additional education on the subject. Two physiotherapists answered “other” which were “*internet*” and “*own experience as a patient with WAD class III*” (fig. 1). It was 31 physiotherapists that marked at least two options in this question. Those who marked a single alternative got their knowledge from the physiotherapy education and health care programs.

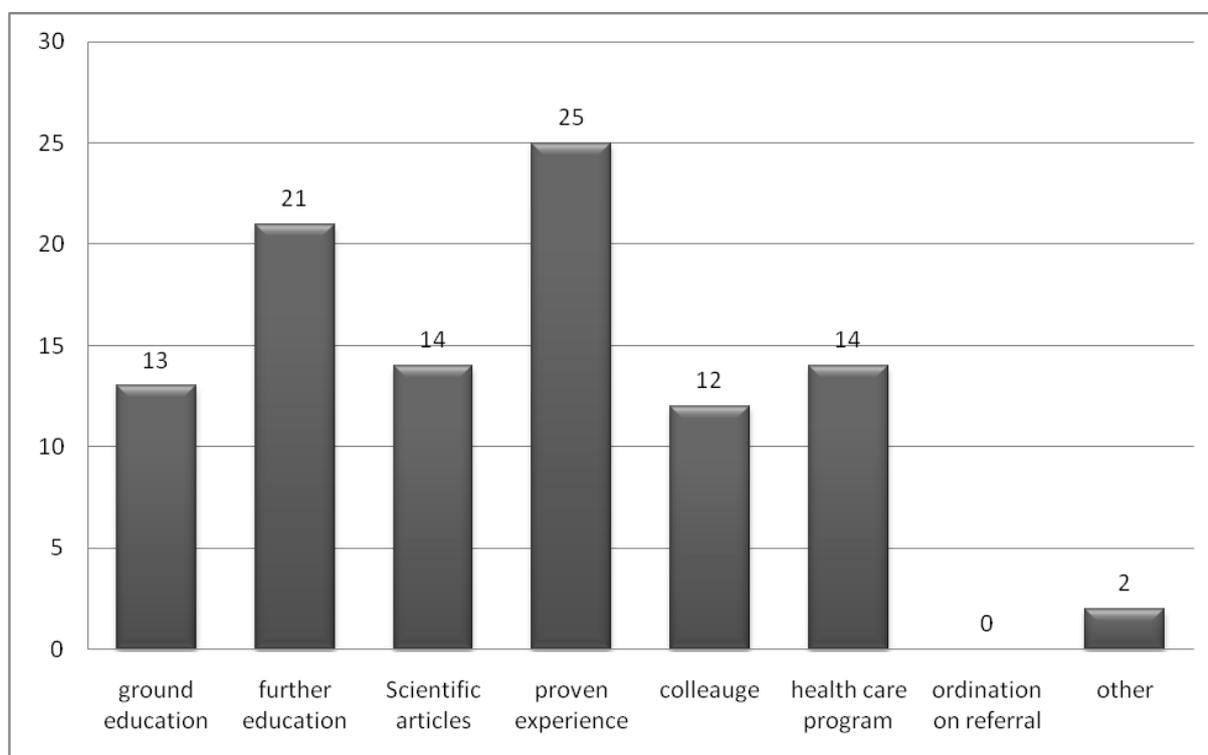


Fig.1 Different sources of information for how physiotherapists treat their patients with WAD in the acute fase (n=33) They were able to choose several options.

5.2 How is the physiotherapy treatment constructed, for patients with WAD grade I and II in health care centers in Sweden?

When it comes to classifying WAD at the different clinics, 48% (16) physiotherapists wrote that they use a classification instrument. Three of those 16, answered that they were classifying WAD 0-4 according the Quebec Task Force (table 1). Ten physiotherapists used a classifying instrument according to Västra Götalands health care program, one used a classifying instrument according to Whiplashkommissionen and two used classifying instruments that the authors could not find and that could not be founded in any database. It was 48% (16) physiotherapists that did not use a classifying instrument. Different reasons were stated to this.

Examples of answers:

“Do not know what “acute WAD” is”

“Work more with function”

“Don’t want to use a big amount of different instruments”

“Do not know any classification instrument”

“Have too few patients to get a routine”

“Do not have a health care program to follow”

“Sending my patients to pain rehabilitation”

“Think that it is hard to put every patient in the same pattern”

“Lack of knowledge”

The number of patients with WAD containing the symptoms: pain, stiffness, tenderness, trigger points and reduced cervical mobility seeking care every year varies between the clinics. It was 28 clinics that answered the question. The median was 10 (2-50) patients every year.

The treatments that the physiotherapists used are presented in figure 2. Movement training for the cervical spine was used by 100% (33) of the physiotherapists. Correction of posture was used by 94% (31) and ergonomic advice by 91% (30) of the physiotherapists. 9% (3) of the physiotherapists stated neck collar as a treatment option. The collar was in a soft or anatomic model and the patients wore it for a couple of days or approximately three weeks at the most.

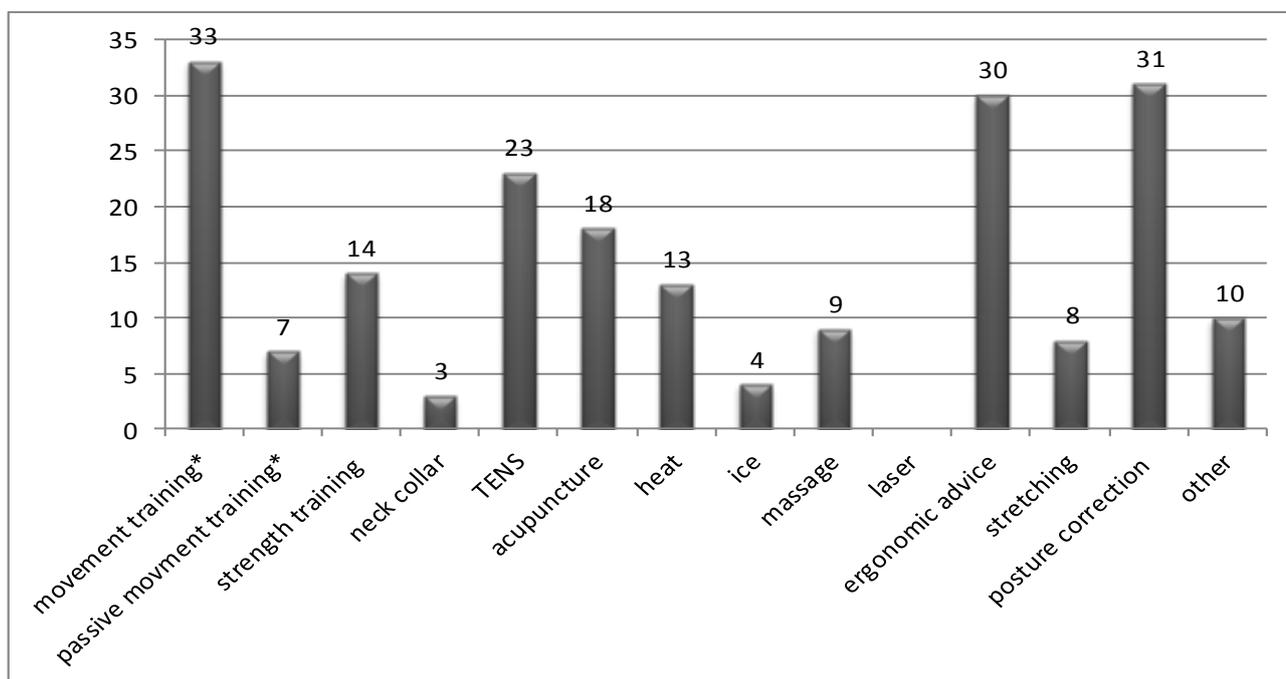


Fig.2 Physiotherapy treatment for patients with WAD (n=33) They were able to choose several options. *for the cervical spine

The physiotherapists graded the treatment options 1 – 4 where one was the firsthand choice and so on. There were 67% (22) of the physiotherapists who choose movement training for the cervical spine as their first choice. Correction of posture was stated as a second choice by 30% (10) of the physiotherapists (table 2).

Table 2. Physiotherapy treatment for patients with WAD, grade one to four, there one is the firsthand choice (n=29)

**for the cervical spine*

	1st hand	2nd hand	3rd hand	4th hand
movement training*	22	3	3	1
passive movement training*	2		1	1
strength training		3	1	4
neck collar				1
TENS		6	3	6
acupuncture	1		5	4
heat				2
ice			1	
massage			1	1
laser				
ergonomic advice		6	8	3
stretching			1	1
posture correction	5	10	4	3
other			1	2

Twenty-six physiotherapists stated that they used stabilizing strength training as a treatment of WAD. Isometric strength training was used by 11 of the physiotherapists and 10 used dynamic strength training. Ten physiotherapists answered with one alternative and seven of them stated stabilizing strength training, the remaining four stated dynamic-, isometric- and endurance strength training. One physiotherapist stated that he or she worked with segmental stabilization. Two physiotherapists had commented this question and wrote that the type of strength training a patient gets is individual and depends on if the patient is hyper- or hypomobile. Four physiotherapists did not answer this question at all (fig. 3).

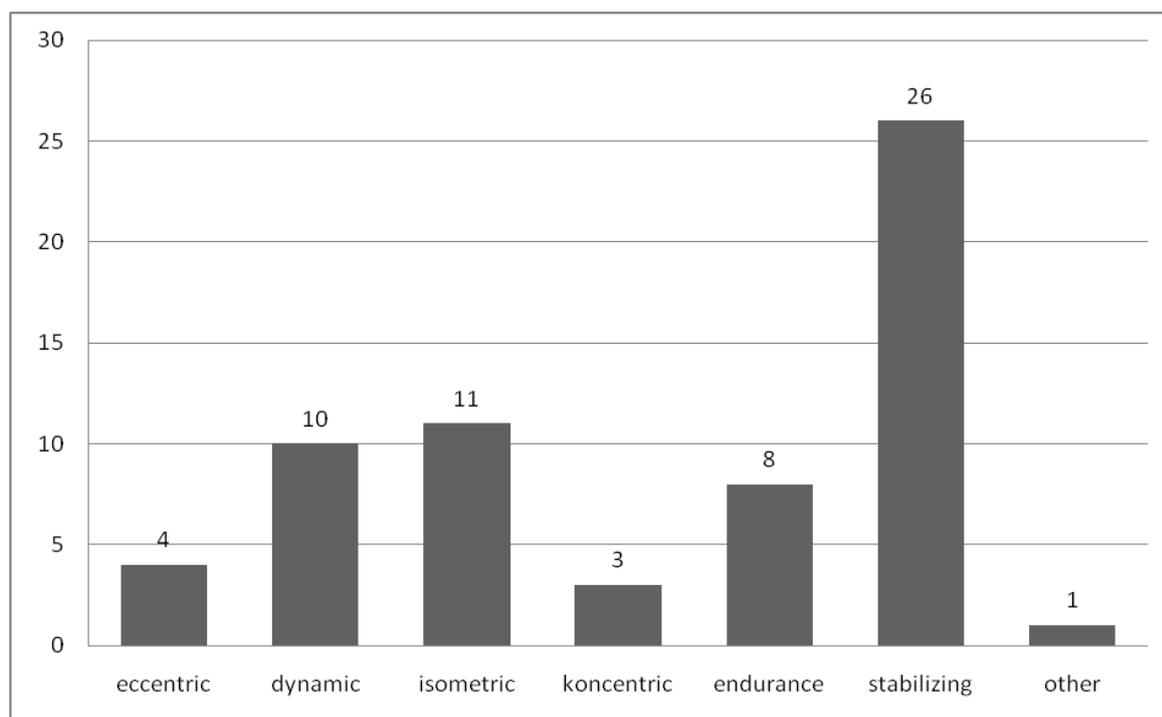


Fig.3 Different types of strength training for patients with WAD (n=29) They were able to choose several options.

Regarding home training programs, 31 physiotherapists give it to patients with WAD. Twenty physiotherapists worked with supervised individual training. One physiotherapist stated “other” and wrote that the structure of training differs and that it depends on the patient’s own possibilities.

Sixteen of the physiotherapists stated that they see their patients once a week, ten physiotherapists treat their patient two times a week, one treat two times a month and three physiotherapists has answered “less than two times a month”. One physiotherapist had not stated any specific number because “it is individual”.

Twentytwo physiotherapists had a follow-up 1-3 months after the injury. Three physiotherapists who did not answer this question thus they meant that it is hard to generalize. Twentysix physiotherapists did follow-ups after less than a month or between 1-3 months, three physiotherapists after 3-6 months, one after 6-9 months and one physiotherapist did a follow-up after more than 12 months.

5.3 What information is given to the patients in the acute phase current the traumatic head injury?

There were 20 physiotherapists who stated that they give the patient information about the importance of movement exercise for the cervical spine, in the initial state after the injury. Fifteen physiotherapists give advice about regime (including posture and ergonomics) and 12 physiotherapists inform their patients that they have a good prognosis to be fully recovered (fig. 4). All physiotherapists in this study give their patients information orally and 22 of them also give supplementary written information.

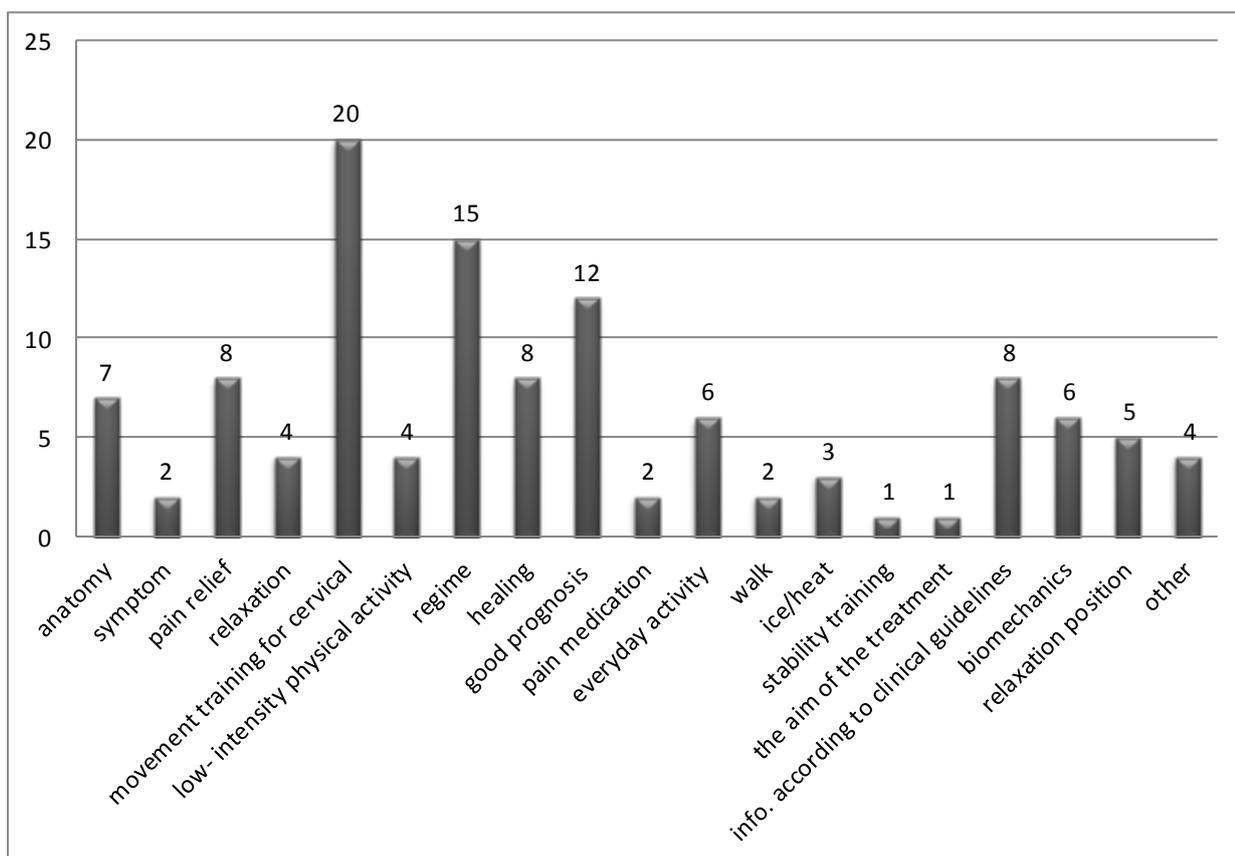


Fig. 4 Physiotherapist’s initial information to patients with WAD (n=33). They were able to choose several options.

5.4 How does the physiotherapist evaluate the treatment outcome according to both function and life quality?

The physiotherapists were asked to state an approximate percentage concerning the number of patients with WAD who get long-term symptoms. This percentage varies between 1-100 and 10 physiotherapists

answered that they did not know or that they were uncertain. Twentyeight physiotherapists regarded pain as the most common long-term symptom. Ten physiotherapists added own options and three of them regarded fear of motion as a long-termed symptom. In the category “other” symptoms like change in posture, change in movement, anxiety, dizziness, effect on vision, sleeping problems, cognitive disorders and numbness were mentioned (fig. 5). One of the physiotherapists did not answer this question.

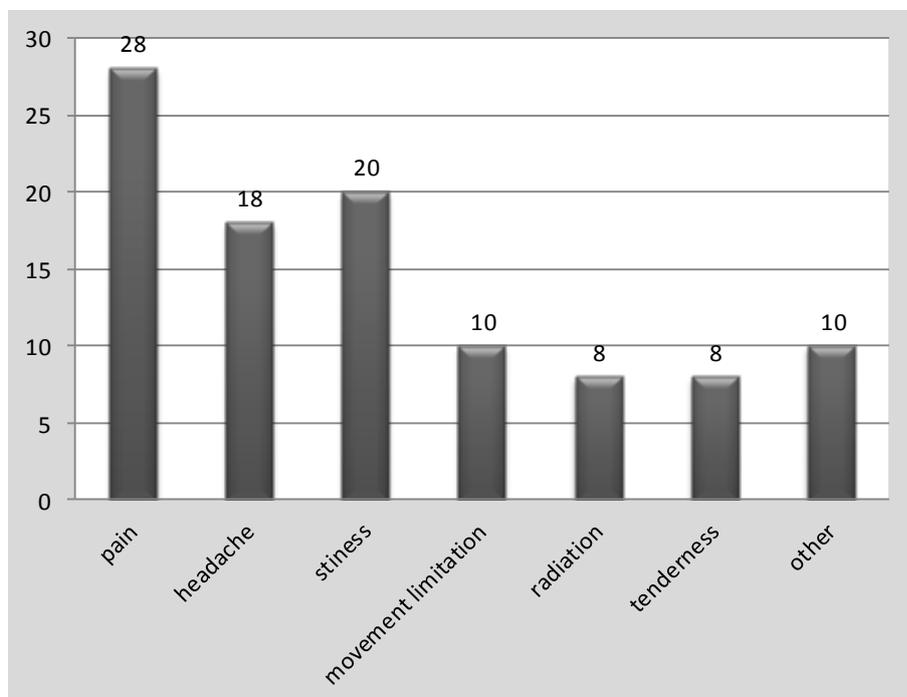


Fig. 5 The physiotherapists perception of the patients longterm symtoms (n=32). They were able to choose several options.

The question about evaluation was answered by 33 physiotherapitsts of which 28 stated that they evaluate the function of their WAD-patients after treatment. This question was open and 33 % of the physiotherapists evaluate using the Visual analog scale (VAS) and 20% of the physiotherapists evaluate ROM (annex 3, fig.6). The evaluation instruments mentioned in the category “other” are presented in table 3.

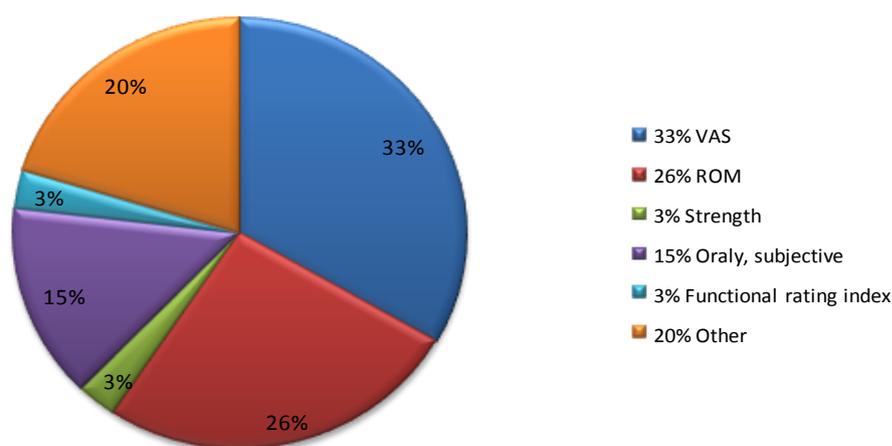


Fig.6 Different evaluation instruments for patients with WAD (n=28) “Other” se table 3. They were able to choose several options.

Table 3. The evaluation instruments in the category “other” from fig 6. Explanations to each instrument see annex 3

SF 36
Neck Disability Index (NDI)
EQ-5D
Functional tests
Disabilities of the Arm, Shoulder and Hand (DASH)
Paindrawing
Tests of Active Daily Living (ADL)
Clinical tests
Palpation
New status
Tests from Västra Götalands Health Care program
According to guidelines
Oswestry Neck Disability Index (ONDI)
Visual Analog pain Scale (VAS) for sleeping problems

Sixteen physiotherapists evaluated the patients' quality of life. Of these 16, 8 physiotherapists (47 % of the total number of answers) stated that they evaluate this subjectively, often by conversation with the patient (fig.7). In the category “other” evaluation instruments like ADL, VAS, ROM and “according to guidelines” was mentioned.

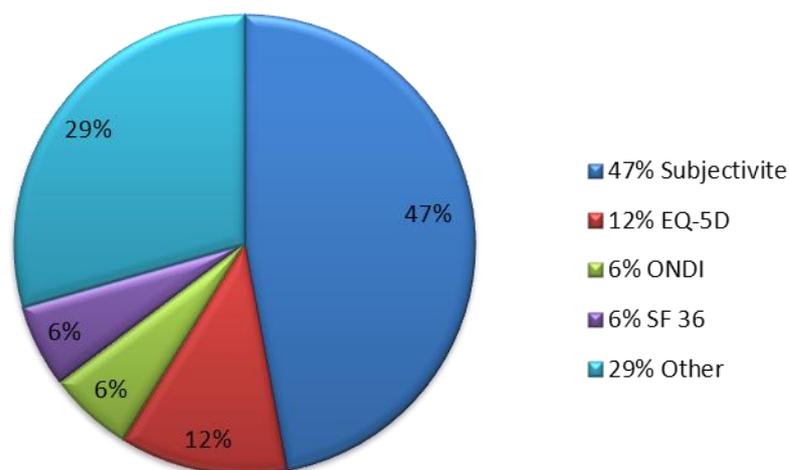


Fig. 7 Instruments for evaluating quality of life in patients with WAD (n=16). They were able to choose several options.

Regarding when, in time, to perform a follow-up for patient with WAD, 38 % answered that it is individual and it is done when needed, 17 % did not perform a follow-up at all and 27 % performed a follow-up in six months (fig.8). Two physiotherapists did not answer the question and 18 % stated “other”. Different reasons were given to this:

Example of answers:

“The patient takes own contact”

“Follow-up is made over the phone”

“Continuous contact after the injury”

“There is no standard for when a follow-up is supposed to take place”

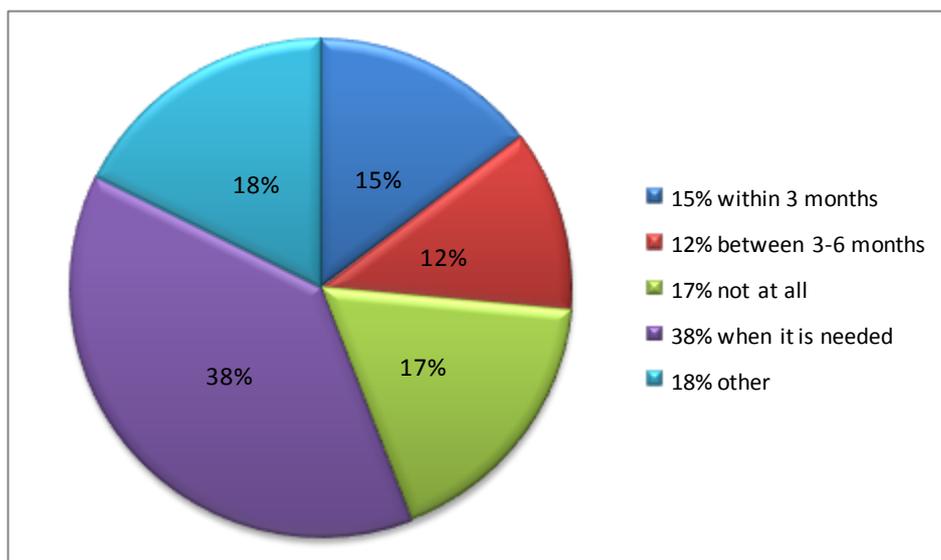


Fig. 8 Time for follow up for patients with WAD (n=31)

6. Discussion

6.1 Method discussion

The method we chose was relevant to our study. We wanted to have both a geographical spread and a large number of responses. This had not been possible with a qualitative survey, like interviews. Most of the questions resulted in relevant responses. All of the questions were formulated so that the physiotherapists answered in a similar way, which means that we can see a trend in the responses. In retrospect, a couple of our questions could be better formulated, in order to provide more specific answers. We should e.g. have clarified what "acute WAD" means earlier in the survey, because some physiotherapists replied that they did not know what "acute WAD" is. Another example is question number 16: *If you instruct the patient to work out, what type of strength training? (Specify one or more options)* We could have asked the physiotherapists to specify which muscle groups they were training. The responses from this question are now unsatisfying since we do not know if the training relates to neck, trunk, arms or legs. Finally, we had better added "If no, why not?" after question 22, because it would have been interesting to know why some physiotherapists do not evaluate the function.

We chose primary care units in the counties with universities, because we wanted to include cities spread over Sweden. Our hope was to get 75% of the questionnaires back. However, we had an external drop out of 53%. We do not know why we had that external drop out, but the clinics in northern Sweden and Stockholm were less represented in our study.

One reason to the high level of external drop outs could be the way we investigated whether the health care unit had physiotherapists or not, we simply trusted the information we got from their website. In order to prevent a large proportion of the loss we could have telephoned all health centers, instead of just call them who did not mentioned at the website that they have physiotherapists at. This was unfortunately too time-consuming since many medical centers have a call-back function, which made it difficult to come in contact with their physiotherapist. We experienced the same trouble while sending out our reminders. Most replies we received were from Skane, 14. We guess that this is because the units in southern Sweden probably have their own physiotherapist to a greater extent, than they might have in northern Sweden and in Stockholm. In both Stockholm and Västerbotten, we believe they transmit their patients to external physiotherapists to a greater extent than they do in southern Sweden, perhaps as a result of the "Hälsovalet"-system.

We also had an internal drop out of 14 surveys due to, either lack of physiotherapist or a lack of patients with WAD at the health center. Once again this shows that we were missinformed about which units that provides a physiotherapist.

6.2 Result discussion

The responses mostly came from experienced physiotherapists and the majority had worked with the WAD for a long time. This and the trend we saw in the answers give the results more credibility.

It is clear that dependable experience is the most common source of information and less than 50 % of the physiotherapists make use of scientific articles. Dependable experience is an accepted reference for treatment. But physiotherapy is a subject that is constantly evolving,

not least in WAD, which makes it important for the therapist to be up to date with the latest research.

Most physiotherapists evaluate their treatments according to the patient's function. However, only 50% of physiotherapists classify WAD. It is encouraging that many evaluate the treatment, but we also think it is important to know what type of WAD they are treating, because we want to know which treatment is most effective for each class of WAD. It is therefore important to use the classification- and evaluation tools while treating patients with WAD. The lack of evidence for certain treatments, such as TENS and acupuncture is mentioned in many articles [4.12,].

Eleven physiotherapists were not aware of the fact that they classified the patients with WAD according to Quebec Task Force (table 1). They indicated that they classified WAD according to Whiplashkommisionen and Västra Götaland Care Program, both of which are using the classification WAD 0-4 according to Quebec Task Force. This means that 14 primary care units are using the classification WAD 0-4 according to Quebec Task Force, but only three were aware of it. This is, in our opinion, interesting facts which clearly indicate that information about WAD is slightly unclear and that there is no general standard for how to classify WAD.

The Quebec Task Force classification has existed since 1995 and caught, at that time, widespread attention and increased the awareness of WAD. The classification is a relatively simple way to structure the symptoms and clinical findings. Some think that the instrument should be more detailed and have more sub categories (especially for "class II), others argue that it is too detailed and that it does not take account for exclusive neurological findings, peculiar to WAD. Some also think that the Quebec Task Force classification is a valuable tool in the initial stage of the injury, but that the symptoms of WAD after a couple of months resembles the symptoms that long-term neck problems can cause and therefore becomes less useful. There are a few other classifying instruments, but it is clear that more extensive research are needed to obtain more specific evaluate tools [2].

Less than half of the physiotherapists evaluate their patients' quality of life. Some blame the time pressure and that there are no good assessments instruments. As a physiotherapist there is a tendency to focus on the patients function but you should not forget to evaluate their quality of life. Of course, patients who are pain free and have a good function can estimate a high quality of life. However, if you do not evaluate this, there is a risk that you miss those, despite of good function, that has a psychosomatic effect after the whiplash trauma. The patients who state that they have a physical load often develop a poorer mental health [15].

An improved function, such as increased cervical range of motion, does not necessarily mean that the patient feels more mobile. Therefore, physiotherapists should use assessment instruments that are mainly patient-related and are evaluating the patient's experience of function and symptoms [16].

All physiotherapists who responded the survey believe that the patient's attitude towards their treatment will have an affect on the outcome, this is supported by scientific evidence [6, 7]. Although, merely a third of the respondents provides information about the positive forecast to the patient. But since the question was open and we did not specifically ask about what kind of information the physiotherapists provide regarding the patient's mental attitude to rehabilitation, we do not know if more therapists give this information. This is an important part of rehabilitation, because those who have a positive attitude are recovering three times as

fast as those who never think they will be fully recovered [7]. It has also been shown that patients who have a positive expectation to return to work has a 42 % faster rate of self-reported recovery than those with low expectations. Therefore, knowledge of the patient's expectations is of value for the caregiver [17]. The most advantageous for patients with WAD is to get information about the often positive prognosis, the value of a positive attitude and to see a physiotherapist for movement training regularly. However, this is expensive and time-consuming. If the physiotherapists initially provide information and give the patient a home training program it may be more effective in terms of both time and money. Nevertheless, one should not forget the monitoring and evaluation of the treatment.

According to the responses in the survey, it is common to treat the patient 1-2 times a week. The monitoring usually takes place within three months after the injury, by phone or a visit. Some patients only meet the physiotherapist once and are then tasked to make contact if the problems become worse or if the symptoms do not disappear. In our opinion this is too much responsibility to put on a patient that does not have a physiotherapist's expertise in this area.

The physiotherapists have indicated that the most commonly long-term symptoms are pain, stiffness and headache. This is in compliance with the common symptoms of the current research we have found [4, 5]. This shows that physiotherapists in primary care units are aware of the main problems. However, there is no general idea of what percentage of the patients that may develop long-term problems. This could have something to do with the low number of follow-ups. It can also be a result of the fact that many physiotherapists let their patients get in touch if necessary. If the patient has received incorrect or too poorly performed information from the beginning he or she may have the perception that there is nothing to do, which may result in that the patient do not get in touch at all. Again, our responses from the survey indicate that there is no standard for when or how a follow-up should be done for patients with WAD.

Some physiotherapists use TENS and acupuncture treatment. We found no evidence either for or against this [12, 13]. Probably they use dependable experience and because there is nothing that contradicts these methods, you can adjust the treatment according to the individual's wishes. These are also methods that may be effective as a part of the treatment, but often it is not the major part. More research is needed in this area.

Scientific research shows that the use of cervical collar and immobilization initially are not in favor of the patient. Therefore, it is interesting that three physiotherapists responded that they sometimes used cervical collar during the first three weeks. The reason for this could be dependable experience, but there is no scientific evidence to support it. But the question is whether these physiotherapists really do follow up? The improvement is seen after six months, according to the articles we have found and it is seen in those who return to daily life immediately after the injury and refrain from sick leave, compared to those receiving a neck collar and are at sick leave the first 14 days [9].

Many of the physiotherapists that answered the survey had referred to the Whiplashkommissionen or the Västra Götalands Care Program. These two have surely done a great job when it comes to examining, treating and follow up for patients with WAD and that is why it surprises us that there are no national guidelines in the subject yet. We hope that this study primarily will draw attention to the fact that more research is needed in this subject. We would also like to inspire for a preparation of national guidelines for treatment of patients with WAD. National guidelines are needed, partly to make sure that the treatment is the same in the whole country and also to facilitate the treatment for the caregiver.

7. Conclusion

With the responds we have received from the survey, we note that physiotherapists often work with the most effective treatment methods. According to todays evidence the physiotherapists give the patient advice about movement training for the cervical spine and give advice to return to everyday activities. The physiotherapists are aware of patient´s attitudes impact on the rehabilitation. Some allow the patient to train individually with observation and most physiotherapists also complemet with a home training program.

As for monitoring, the majority are evaluating the function but not the quality of life. In order to advance the scientific research, the individual physiotherapist needs to be better at classifying WAD and document the evaluations. Many state that there is no good evaluation tool for quality of life - this is perhaps something that needs to be developed.

After the response we received from the survey, we noted that physiotherapists often work with effective treatments. However, they should spend some more time providing information to the patients about their prognosis and how the patient´s attitude affects his rehabilitation results.

We also think there should be national guidelines for the treatment of patients with WAD, so that the patients receives equal treatment regardless of health care providers and also make it easier for caregivers to provide the right treatment.

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Annex 1

Enkätundersökning
Öppenvårdskliniker i Sverige.

Tack för att du deltar i studien genom att fylla i enkäten! Vi ber dig återsända ifylld enkät till oss i bifogat svarskuvert. All information du delger oss behandlas konfidentiellt. Vi är tacksamma för svar senast 19 mars 2010.

1. Behandlar ni patienter med akut WAD vid din klinik? (Om ja, fortsätt till fråga 3 på nästa sida)

- Ja
- Nej

2. Om nej, varför inte?

Om du svarat "Nej" på ovanstående frågor tackar vi för din medverkan och ber dig återsända provenkäten i bifogat svarskuvert

Del I –Behandling

3. Hur många år har du varit verksam sjukgymnast?

4. Hur länge har du arbetat med patienter som har akut WAD?

5. Använder ni något klassificeringsinstrument för akut WAD, vid din klinik?

- Ja
- Nej

6. Om ja, vilket?

7. Om nej, varför inte?

8. Hur många patienter behandlas för akut WAD med symtomen smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet vid din klinik per år? (Ange ungefärligt antal)

9. Vilken information får patienten när du träffar honom/henne första gången?

10. Hur informeras patienten?

- Muntligt individuellt
- Skriftligt
- Videofilm
- Nackskola
- Inte alls
- Annat _____

11. Vilka behandlingsmetoder används vid din klinik för patienter med akut WAD med symtomen smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet? (Ange alla olika slags behandlingar oavsett hur ofta de används)

- | | |
|--|--|
| 1. <input type="checkbox"/> Rörelseträning för cervikalcolumna | 5. <input type="checkbox"/> TENS |
| 2. <input type="checkbox"/> Passivt rörelseuttag för cervikalcolumna | 6. <input type="checkbox"/> Akupunktur |
| 3. <input type="checkbox"/> Styrketräning för cervikalcolumna | 7. <input type="checkbox"/> Värme |
| 4.a) <input type="checkbox"/> Nackkrage | 8. <input type="checkbox"/> Kyla |
| b) Hur länge? _____ | 9. <input type="checkbox"/> Massage |
| c) Vilken sorts krage? _____ | 10. <input type="checkbox"/> Laser |
| 14. <input type="checkbox"/> Annan metod, ange vilken/vilka | 11. <input type="checkbox"/> Ergonomisk rådgivning |
| | 12. <input type="checkbox"/> Stretching |
| | 13. <input type="checkbox"/> Hållningskorrektion |
-
-
-

12. Ange nu de fyra metoder som används mest vid din klinik för patienter med akut WAD med symtomen smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet. Gradera 1 – 4 (1 = används mest)

- | | |
|--|--------------------------------|
| 1. Rörelseträning för cervikalcolumna | 5. TENS..... |
| 2. Passivt rörelseuttag för cervikalcolumna..... | 6. Akupunktur..... |
| 3. Styrketräning för cervikalcolumna | 7. Värme..... |
| 4.a) Nackkrage..... | 8. Kyla..... |
| b) Hur länge? _____ | 9. Massage..... |
| c) Vilken sorts krage? _____ | 10. Laser..... |
| 14. Annan metod, ange vilken/vilka..... | 11. Ergonomisk rådgivning..... |
| | 12. Stretching..... |
| | 13. Hållnings korrektion..... |
-
-
-

13. Hur ofta behandlas vanligtvis en patient med akut WAD med symtomen smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet vid din klinik?

- Fler än 2 ggr/vecka
- 2 ggr/vecka
- 1 gång/vecka
- 2 ggr/månad
- Mer sällan än 2 ggr/månad

14. Under hur lång tid behandlar du i genomsnitt patienter med akut WAD med symtomen smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet vid din klinik?

- Kortare tid än 1 månad
- 1 – 3 månader
- 3 – 6 månader
- 6 – 9 månader
- 9 - 12 månader
- Längre tid än 12 månader

15. På vilken/vilka grunder väljer du behandlingsmetod på din klinik? (ange ett eller flera alternativ)

- Kunskap inhämtad på grundutbildningen
- Kunskap inhämtad genom vidareutbildning
- Kunskap inhämtad ut vetenskapliga artiklar
- Kunskap inhämtad genom beprövad erfarenhet
- Kunskap inhämtad via kollegor
- Vårdprogram på kliniken
- Ordination på remiss
- Annat _____

16. Om du instruerar patienten att styrketräna, vilken typ av styrketräning? (ange ett eller flera alternativ)

- | | |
|--------------------------------------|---|
| <input type="checkbox"/> Excentrisk | <input type="checkbox"/> Koncentrisk |
| <input type="checkbox"/> Dynamisk | <input type="checkbox"/> Uthållig |
| <input type="checkbox"/> Isometrisk | <input type="checkbox"/> Stabiliserande |
| <input type="checkbox"/> Annan _____ | |

17. Hur tränar patienterna?

- Hemträning
- Gruppträning
- Individuellt på kliniken utan övervakning
- Individuellt på kliniken med övervakning
- Hänvisas till ett gym
- Annat _____

18. När infaller vanligtvis återbesök för uppföljning av rehabiliteringen? (ange ett eller flera alternativ)

- Efter 3 månader
- Efter 6 månader
- Efter 9 månader
- Efter 12 månader
- Inte alls
- Annat _____

Del II Patientens livskvalité

19. Vilken är din uppfattning, påverkar patienternas inställning till rehabiliteringen resultatet?

- Ja
- Nej

20. Med hänvisning till ditt svar på fråga 8, hur många procent av patienterna får långvariga problem (problem som kvarstår i mer än 3 månader)?

21. Vilka långvariga problem är vanligast, enligt din uppfattning (ange ett eller flera alternativ)?

- Smärta
- Huvudvärk
- Stelhet
- Rörelseinskränkning i cervikalcolumna
- Utstrålning
- Ömhet
- Annat _____

Del III Utvärdering

22. Utvärderar du som sjukgymnast din behandling vid akut WAD med symtomen smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet?

- Ja
- Nej

23. Om du svarat ”Ja” på frågan ovan, på vilket sätt och med vilket/vilka instrument utvärderar du din behandling?

24. Ingår utvärdering av patientens livskvalité i utvärderingen?

- Ja
- Nej

25. Om ”Ja”, med hjälp av vilket utvärderingsinstrument?

26. Om ”Nej”, varför inte?

Om du använder dig av en speciell utvärderingsmall vore vi tacksamma om du kunde bifoga ett exemplar samt ett exempel på ett träningsprogram vid returneringen av enkäten.

Tack för din medverkan!

Vänligen skicka in enkäten senast 19 mars 2010!

Med vänliga hälsningar

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Annex 2

Hej!

Vi är två sjukgymnaststudenter, Linn Frieberg och Fanny Ramel, vid Lunds Universitet som går termin fem. Under denna termin och termin sex ska vi skriva vårt examensarbete.

Vi har valt att göra en klinisk studie för att ta reda på hur sjukgymnaster konservativt behandlar patienter med whiplash associated disorders (WAD) på öppenvårdcentraler i Sverige i det akuta skedet. Vi vill fokusera på patienter med WAD klass I – II (smärta, stelhet, ömhet, triggerpunkter samt minskad cervical rörlighet). Samt att ta reda på patienternas välbefinnande efter behandlingen. Vår förhoppning är att studien ska kunna ligga som grund för fortsatt forskning mot nationella riktlinjer för rehabilitering av WAD.

Enkäten skickas till sjukgymnaster på slumpmässigt utvalda öppenvårdcentraler över hela Sverige. Vi ser gärna att enkäten besvaras av en sjukgymnast med vana inom WAD-rehabilitering. Vår strävan är att få så stor geografisk täckning som möjligt och därför är Er medverkan av stort värde.

Enkäten och svarskuvertet är kodade för att undvika utskick av påminnelser till kliniker som redan har besvarat enkäten.

Samtliga kliniker som besvara enkäten kommer att delges abstrakt/sammanfattning av studien. Det kommer också finnas möjlighet att beställa hela arbetet för de som är intresserade.

Har ni några frågor angående arbetet eller enkäten så hör gärna av Er till oss. Vi vill än en gång poängtera att Er medverkan är betydelsefull för oss. Vi vill gärna ha svaren till handa senast den 19 februari 2010.

Tack på förhand!

Med vänliga hälsningar

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Annex 3

SF 36

The SF-36 is a multi-purpose, short-form health survey with only 36 questions. It yields an 8-scale profile of functional health and well-being scores as well as psychometrically-based physical and mental health summary measures and a preference-based health utility index [18].

Neck Disability Index (NDI) also called Oswestry Neck Disability Index (ONDI)

Is a modification of the Oswestry Low Back Pain Index. It was conducted producing a 10-item scaled questionnaire entitled the Neck Disability Index (NDI). This questionnaire has been designed to give information how the neck pain has affected the ability to manage in everyday life [19, 20].

EQ-5D

EQ-5D is a standardised instrument for use as a measure of health outcome. Responses are graded on a scale from -0.59 to 1.00, with lower scores indicating a poorer quality of life. A score of 0 represents no quality of life and scores less than 0 represent states perceived by the respondent to be worse than death. EQ-5D categorizes health states according to the following dimensions: mobility, self-care, usual activities (e.g. work study, homework or leisure activities), pain/discomfort and anxiety/depression [21].

Disabilities of the Arm, Shoulder and Hand (DASH)

DASH questionnaire is a self-administered region-specific outcome instrument developed to measure upper-extremity disability and symptoms. The DASH consists mainly of a 30-item disability/symptom scale [22].

Visual analog pain scale (VAS)

A visual analog pain, also known as a visual pain scale, is a device which can determine a person's level of pain. The scale consists in a 10 centimeter line on which the person can rate their amount of pain. It gives the respondent freedom to choose their pain's exact intensity. When you record data from this test you announce the number of millimeters from the left of the line with the range 0-100. This scale can also be used for sleeping problems and quality of life [23].