Media Campaign for Improving Knowledge, Attitude and Practice in Low Back Pain

- An Evaluation of the "Active Back" Project

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Preface

Raised by a father who was a family doctor, and was called upon at all times day and night, and by a mother who was a researcher at the University of Oslo in the -60's, I was quite determined in my youth that I would never choose any of those professions as a grown up. Now, I have become both.

I love my work at Eydehavn Legekontor, a small family medicine clinic in Arendal. I love to listen and get to know peoples' small and big complaints, and I definitely recognize the Hippocratic' command: sometimes cure, often alleviate, and always console. The great daily challenge is always to recognise the one with a severe illness in the row of minor complaints.

Nevertheless, the only thing I could possibly envy my colleagues at the hospital was the ability to achieve a high level of competence in a small field – to be really good at something! In 1996/-97 I worked at the local hospital in Arendal at the Department of Physical Medicine and Rehabilitation, as a part of my education for the speciality in Family Medicine. By chance, one of the very first outpatient clinics for back pain in Norway was established at this department at that time, and I became a part of this. This was the start of a stimulating multidisciplinary professional milieu for back pain in my area.

As a result of this establishment in Arendal, I met professor Even Lærum, who introduced me to The Norwegian Back Pain Network and wanted me to participate in a project that ended up as the *Active Back* project. I was also thrilled when professor Holger Ursin wrote me a letter in 1999 inviting me to join a small group of people to discuss the future organisation of LBP research and treatment on a national level. A small step for the world – but a huge step for a family doctor from Arendal….

All of a sudden I realized that I had become a part of a professional milieu at a national level that combined clinical and research competence in a particular medical field. I am enormously grateful to all the people I have met in this milieu, and I am quite confident that the knowledge I have achieved in the field of LBP these years has made me a better family doctor as a whole.

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The research was supported by the *Active Back* project and the Norwegian Back Pain Network as a lot of practical work was done at no cost. The project manager Erik Lindh delivered and collected all questionnaires in the cooperating companies. Linda Sandal and Nina Konglevoll at the Back Pain Network, Research Unit, did a tremendous job in printing, mailing and collecting all questionnaires from the health care providers. They also computed all data into the SPSS program for analyses.

My greatest thanks are directed towards Camilla Ihlebæk, PhD, at the Research Unit. She is above all the one who has led me through the process of learning how to do research. Her combination of optimism, strictness and teaching abilities has been fundamental for the accomplishment of this work. I am most grateful to Camilla.

Furthermore I wish to thank professor Holger Ursin at the University of Bergen, who has been my principal supervisor and provided me with practical help from the Research Unit, included me in most inspiring research environments and meetings and has played an essential role in fulfilling papers and the thesis. Professor Even Lærum introduced me to the National back pain network, and gave me the opportunity to do the research on an exciting experiment. Also the assistant supervisor, Jan Sture Skouen, MD, PhD, at the Physiotherapy Department at the University of Bergen, has shown a lot of enthusiasm and encouraged me in the work.

It has been a new and great experience for me to cooperate in a milieu of researchers, and I am most grateful for the collaboration with co-authors Aage Indahl, Stein Atle Lie, and Marjon Wormgoor. This thesis could not have been accomplished without the *Active Back* project itself, where Even Lærum was chairman of the steering committee, Aage Indahl supervisor of the theoretical basement for the campaign, and Erik Lindh

and Øyvind Sørbrøden responsible for the daily management. The collaboration has been most inspiring and indispensable for the project and the research.

Finally, my dear wife, Anne, has been most encouraging and supportive in this work. She has been through all the frustrations and defeats, but also cheered when I succeeded in the work. Thanks also to Marie, Birgitte, and Nicolay - who may have noticed a busy and not too participating dad some times…..

Introduction

The principal aim of this study was to evaluate whether the media campaign "Active Back" improved knowledge, attitudes, and practices in the populations exposed to the campaign.

During the years 1997-1999 The Victorian Work-Cover Authority performed a media campaign in the Victoria State, Australia, that resulted in significant improvements in beliefs about LBP in the general public, and a decline of 15% in claims for back problems with a reduction in medical cost of 20% per claim (Buchbinder et al 2001). The intention of the *Active Back* project was to reproduce the Australian intervention, on a smaller scale, and limited to two Norwegian counties.

The *first aim* of this study was to explore the actual knowledge, attitudes, and practices held by the general population and their health care providers before the onset of the campaign (Paper one).

The *second aim* was to evaluate the effectiveness of the campaign in terms of improved beliefs and sickness behaviour in the public (Paper two).

The *third aim* was a similar evaluation of the campaign effect on the health care providers, to see if their beliefs were improved following the campaign, and whether the differences between the groups of professionals seen in the first study were reduced (Paper three).

The *fourth aim* was an evaluation of the additional effect of the simultaneous intervention in an occupational setting in the area (Paper four).

Abstract

This thesis is a scientific evaluation of an implementation project of the Norwegian Guidelines on acute back pain in two Norwegian counties, Aust-Agder and Vestfold, during 2002 to 2005. The project consisted of specific interventions towards the general public, the professional health care providers, and 6 cooperating work places. The aim of this study was to investigate whether these interventions had any influence on knowledge, attitudes, and practices held by the target groups of the interventions. The data from the two counties were compared with similar data from a neighbouring county (Telemark).

Low Back Pain is a significant health problem for the individuals and to the society. The lifetime prevalence in Western Europe is estimated to 84%, and the point prevalence up to 33%. People experiencing back pain get frustrated by the lack of consistency among the professionals regarding treatment and understanding of the problem. In Norway, the total cost of sick leave, disability and health care consumption due to LBP is calculated to NOK 13-15 billion per year.

The intervention of this project was a delivery of positive messages about LBP reflecting the actual knowledge and guidelines on the management of back pain. A mass media campaign in Australia in 1997-99 reported significant effects on attitudes and sick leave. Our intervention towards the general public consisted of a similar media campaign, although on a smaller scale. In addition, the health care professionals received written materials and posters for their waiting rooms. In six cooperating companies, the project provided training of peer advisers among the employees.

The data on knowledge and attitudes in the general public were collected by telephone interviews with 500 randomly selected persons in each of the three counties. All 1100 doctors, physiotherapists and chiropractors in primary care in the three counties were asked to answer a postal questionnaire. Similarly, the 3500 employees in the six companies were asked to answer a written questionnaire. These data collections were performed three times, before, during, and at the conclusion of the project.

As measurements of practices, data on sick leave was collected from The National Insurance Administration reflecting the total and the back pain related sick leave of the general public and in the six cooperating companies. In addition, data on surgery rates and imaging examination on LBP were collected from the health institutions in the area. These data were collected for the year before the campaign began (2001), during

the campaign (2003), and at the end of the campaign (2005), from the intervention counties and the control county.

In paper # 1 (before the campaign) we found that people that had experienced back pain previously had more optimistic beliefs about LBP than those who currently had back pain when interviewed, or those who never had experienced any back pain. We also found significant differences between the groups of health care providers, particularly that chiropractors had less belief in spontaneous recovery from an episode of back pain than doctors and physiotherapists. The study also demonstrated a relationship between beliefs held by the individual and the profession they had chosen at their last episode of LBP.

The results of the media campaign presented in *paper # 2* showed a small, but statistically significant improvement in beliefs held by the public exposed to the campaign as opposed to those in the control county. However, this did not lead to any corresponding change in sickness behaviour.

Paper # 3 presents an attention rate to the campaign close to 100% among the providers in the intervention counties. However, although there was an improvement in beliefs held by the professionals during the campaign period, we found the same improvement also in the control county and were therefore unable to relate this to the campaign. Furthermore, the differences between the provider groups previously reported in paper #1 actually seemed to increase during the period.

In the six cooperating companies, where a specific on-site intervention was added to the campaign, there was a significant improvement in beliefs accompanied by a total sickness absence decrease by 27% and LBP related work absence by 49% (*paper #4*).

These findings have thus led us to the conclusions that the scale of our media campaign may have been too small to produce sufficient changes in attitudes in the general public to influence sickness behaviour. The addition of a peer support at the work place seemed to make the additional effect needed to reduce sickness absence.

List of publications

Paper 1 Werner EL, Ihlebæk C, Skouen JS, Lærum E. Beliefs about low back pain in the Norwegian general population: Are they related to pain experiences and health professionals? *Spine* 2005; 30 (15): 1770 – 76

Paper 2 Werner EL, Ihlebæk C, Lærum E, Wormgoor MEA, Indahl A. Low back pain media campaign: Effect on beliefs, but not on sickness behaviour. *Submitted*

Paper 3 Werner EL, Gross D, Lie SA, Ihlebæk C. Health care provider back pain beliefs unaffected by a media campaign. *Submitted*

Paper 4 Werner EL, Lærum E, Wormgoor MEA, Lindh E, Indahl A. Peer support in an occupational setting preventing LBP related sick leave. *Occupational Medicine* 2007; DOI: 10.1093/occmed/kqm094

Contents

1. Introduction and theoretical framework

1.1 Low back pain

1.1.1 Definition and classifications

Low back pain is defined as pain and discomfort localised below the costal margin and above the inferior gluteal fold, with or without referred leg pain (van Tulder et al. 2006).

Due to lack of precise pathoanatomical aetiology for most episodes of LBP, the following diagnostic triage has been generally accepted the past decades (Nor Guidelines 2002; Waddell 2004 (c)):

- Non-specific LBP (covering about 85% of all LBP cases)
- Nerve root pain (covering about 10-15% of all cases)
- Possible serious spinal pathology (covering about 1-5% of all cases)

Non-specific back pain may originate from many spinal structures, including ligaments, facet joints, the paravertebral musculature and fascia, and the intervertebral disc (Deyo & Weinstein 01). Non-specific LBP is mechanical in the sense that it varies with physical activity and different postures and movements may make the pain worse (Waddell 2004 (a)). The pain may affect the lower limb on one or both sides, and also spread to the buttocks. The normal course of non-specific back pain is self-limiting and recovery occurs within few weeks (Waddell 2004 (b), Cherkin et al. 1996, Pengel et al. 2003). The diagnosis of non-specific LBP will often be based on the absence of other specific causes for the pain.

Nerve root pain is a specific illness affecting the nerve root in a particular level (most often L3/L4, L4/L5 or L5/S1). Traditionally, the nerve root pain was understood as a mechanical pressure on a specific nerve root, most often because of a disc herniation. The radiation in the lower limb would then follow the corresponding nerve. However, it may often be a discrepancy between the findings on a CT or MRI scan and the clinical radiation. Recent research has suggested that not only a mechanical pressure on the nerve root may produce the typical radiation, but also inflammation produced by substances leaking from the herniated disc may do this (Onda et al. 2004)). This has led to optimistic research on medical treatment of disc herniation, which unfortunately has been unsuccessful so far (Korhonen et al. 2005).

The *possible serious spinal pathology* covers spinal tumours, inflammatory diseases and other rare reasons for back pain with or without radiation. The guidelines use the term "red flags" about signs that should make the health care provider consider serious spinal pathology as a possible reason for LBP.

Sub-classification

The many attempts to find valid sub-classifications of LBP based on pathoanatomical mechanisms have so far been unsuccessful (Nachemson & Vingård 2000, Indahl 2004, Billis et al. 2007). The lack of coherence between specific findings on imaging techniques, physical signs and symptoms has been frustrating to many clinicians and patients. The criteria for an accurate test to diagnose the source of a patient's pain require an ability to abolish or reproduce the specific symptoms (Saal 2002). This has not been found – possibly because of the many structures involved that produce identical symptoms (Kent 2005).

In addition to the diagnostic triage described above, there is also an international consensus for a time-related classification of the LBP:

- *Acute LBP* is defined with the duration of less than 6 weeks
- *Sub-acute LBP* has a duration between 6 and 12 weeks, and
- *Chronic LBP* persists more than 12 weeks

There is no evidence for structural changes as a rationale for this classification. The only clinical use of this is for the clinician to be aware that with the passage of time there is a decreasing likelihood for self-recovery and increasing attention should be paid to possible non-medical factors influencing the recovery.

Not all guidelines use the term sub-acute LBP, and acute LBP may last up to 12 weeks. In the Norwegian guidelines, the term “chronic LBP” is suggested replaced by the term “longstanding LBP” in an attempt to reduce the notion that any LBP lasting for more than 12 weeks is condemned to be for life.

While this classification reflects one episode of LBP, most people experience LBP as a recurrent condition (von Korff et al. 1996). There is an ongoing debate whether these “chronic recurrent LBP” constitutes a separate group of LBP patients, or should be labelled as separate episodes of acute LBP as chronic (longstanding) LBP. In the new

Norwegian guidelines of 2007, recurrent LBP is defined as new episodes of back pain with more than three months interval from last episode (Lærum et al. 2007).

Although attempts of sub-classifying LBP patients are still controversial, it should be mentioned the attention that lately has been paid to the possible association with specific MRI findings and LBP, named Modic changes type 1, 2 or 3. Histologically, Modic changes type 1 show degeneration and regeneration and vascular granulation tissue, while type 2 also contains end plate disruption, and in type 3 one finds bone sclerosis (Albert & Manniche 2007). The transition from type 1 to type 2 has been found to correlate with improvement of LBP symptoms (Mitra et al. 2004), as opposed to increasing type 1 changes, which relate to increased symptoms. This may be due to more acute stages of inflammation in type 1 changes than in type 2. The type 3 changes with diskitis and end plate degeneration have been found to relate to sustained symptoms following discectomy (Albert & Manniche 2007, Boden et al. 1992).

A sub-classification based on motor control impairment has also been suggested. Patients with longstanding non-specific pain may be divided into five groups according to distinct patterns of impairments in the control of their lumbar spine leading to repeated stress and strain and consequently ongoing pain (Dankaerts et al. 2006).

1.1.2 Green, yellow, red flags

Most people experiencing an episode of acute back pain will recover spontaneously within a few weeks (van Tulder et al. 2006, von Korff et al. 1996). We have no scientific knowledge about structural abnormities corresponding to specific prognoses. On the contrary, there is an increasing general understanding that longstanding, or "chronified" LBP, is mostly not due to medical conditions. To identify those who have high probability not to recover as expected, a listing of "yellow flags" has been introduced by several authors and guidelines (Kendall 1999).

The yellow flags are (Samantha et al. 2003):

- A negative attitude that back pain is harmful or potentially severely disabling
- Fear avoidance behaviour and reduced activity levels
- An expectation that passive, rather than active, treatment will be effective
- A tendency to depression, low moral, and social withdrawal
- Social or financial problems

These yellow flags have been found to constitute principal risk factors for the transfer of acute LBP into a chronic state. In practice, these "yellow flags" express inappropriate beliefs about LBP, inappropriate pain behaviour, work related problems or emotional problems (van Tulder et al. 2006).

The task for the clinician is to identify and separate those who most probably will recover spontaneously, and not expose these people to an amount of useless treatments. In addition to the internationally accepted "red flags" and "yellow flags", the Norwegian guidelines therefore launched the term "green flags" for signs that should make the patient and the provider confident on the harmlessness and good prognosis of the acute back pain as a self-recovering condition (Lærum et al. 2007).

The "green flags" are (Lærum et al. 2007):

- Absence of red and yellow flags
- No signs of radiation
- Patient in a good condition
- Short duration of back pain
- No previous experiences of LBP or long period between the episodes

"The red flags" are risk factors associated with higher risk of serious disorders causing LBP, implicating that further investigations should be required to exclude malignancy, infection, inflammatory disease etc. Such factors are (van Tulder et al. 2006, Bigos et al. 1994):

- Age of onset less than 20 or more than 55 years
- Recent history of violent trauma
- Constant progressive, non mechanical pain
- Thoracic pain
- Medical history of malignancy
- History of use of corticosteroids
- Drug abuse, immunosuppression, HIV
- Systematically unwell
- Unexplained weight loss
- Widespread neurological symptoms – including cauda equina syndrome

- Structural deformity
- Fever

1.1.3 Comorbidity

Research has established that LBP patients often have other medical complaints as well, and there has been an increasing interest for this comorbidity the last decade. A recent Norwegian study revealed that only 7 out of 457 patients at a spine clinic reported LBP as their only complaint (Hagen EM et al. 2006). This is in line with a study of 5700 US citizens that found that 87% of people with chronic LBP reported at least one comorbid condition (von Korff et al. 2005). A Norwegian epidemiological study from 1999 found a prevalence of longstanding LBP of 7,5%, but only 2% reported LBP without other painful localisations (Hoddevik & Selmer 1999).

LBP has been showed to be positively associated with a great variety of disorders, like headache, cardiovascular disease, asthma, hay fever, gynaecological disease and neck pain (Hestbæk et al. 2004) as well as widespread musculoskeletal pain (Raspe et al. 2003). These findings have made it difficult to understand LBP as a purely biomechanical disorder.

Subjective health complaints have been introduced as a concept of complaints without pathological signs and symptoms, or where the pathological findings are disproportionate to the illness experience (Eriksen et al. 1999). Longstanding unspecific LBP will usually fit into this description. Interestingly, recent research on irritable bowel syndrome has found similar characteristics of people suffering from irritable bowel syndrome as previously reported on LBP patients, and also found LBP to be one of the most common comorbid complaints among irritable bowel syndrome patients (Vandvik et al. 2006).

1.1.4 Treatment

Being a common, multifactorial self-limiting condition, treatment is actually most often not needed for LBP. It is postulated that there are no treatments that really compete with the natural course of an acute LBP (Indahl 2004), and that specific treatment may be more harmful than beneficial because it makes patients passive waiting for recovery (Indahl et al. 1995, Gandjour et al. 2005).

The recommendation of the guidelines for the *non-specific acute back pain* is limited to an advice to stay active, and to keep on with daily activities preferably including work activity (Nor Guidelines 2002, van Tulder 2006). There is no evidence to prove any specific treatment superior to another, and most probably the effect of the various treatments is simply modification of pain. This may be important for the patient, but does not influence the duration of the episode (Indahl 2004).

For the *chronic (long-lasting) non-specific LBP*, the guidelines recommend exercises, particularly in combination with cognitive behavioural therapy (Airaksinen et al. 2006). Multidisciplinary treatment programs that combine physical exercises and cognitive therapy have gained much attention and have been shown efficient in order to reduce sick leave and disability (Tveito et al. 2004).

Passive interventions, including spinal manipulation, massage, acupuncture and surgery, show conflicting or no evidence for effect (Airaksinen et al. 2006). The most common surgery procedure has been lumbar fusion. In the last years disc replacements have gained increased interest (Zigler et al. 2003). Unfortunately, there is still no clear evidence for which patients that will benefit from these surgical procedures, and therefore, they remain experimental (Fritsch et al. 1996, Airaksinen et al. 2006). A Norwegian multicenter randomised trial found equal effect on pain experience and sick leave from a combined exercise and cognitive treatment compared with lumbar fusion surgery (Brox et al. 2003).

Even when the *nerve root* is affected, the basic treatment principles for unspecific LBP are valid as well. Most herniated discs will regress spontaneously over time and no particular treatment is needed or will shorten the recovery, except for surgery. Lumbar discectomy is the most common surgical procedure, and has been claimed to be the only effective treatment that actually cures this condition. Nevertheless, controlled studies demonstrate that the long-term result of a nerve root injury recovered spontaneously or by surgery is basically equal (Weber 1983, Weinstein et al. 2006, Wilco et al. 2007).

1.2 Prevalence and costs of LBP

The lifetime prevalence of LBP is over 70% in industrialised countries with peak prevalence between ages 35 and 55 (van Tulder et al. 2006). One-year prevalence in Norway in 1995 was found to be 53% (Natvig et al. 1994), and the two weeks prevalence 42% (Brage & Lærum 1999).

The incidence rate of LBP complaints lasting at least 15 days during the past month was 2,8% among men and 2,3% among women in a recent Norwegian epidemiological study of 66000 inhabitants of Nord-Trøndelag (Hagen K et al. 2006). This underlines the fact that although an episode of acute back pain usually is self-limiting with a recovery rate of 90% within 6 weeks (van Tulder et al. 2006), recurrence is common. About 33% of patients with an acute LBP report intermittent or continued pain one year after (von Korff & Saunders 1996). A Swedish study from 1993 reported that the prevalence of LBP lasting longer than 3 months was 23% (Anderson et al 1993).

Two recent studies have found the prevalence of LBP stable over several years. In Norway, Ihlebæk et al. found equal prevalence of back pain in 1996 and 2003 (Ihlebæk et al. 2007) and in Germany the LBP prevalence was found stable over a decade (Hüppe et al 2007). The high number of patients with recurrent pain makes it difficult to distinguish the prevalence of acute and chronic LBP. Also, there is a lack of standards for severity, locations, and comorbid conditions (Airaksinen et al. 2006).

Back pain patients constitute 3,5 – 5% of all consultations at Norwegian General Practitioners (Werner et al. 2002, Hunskår et al. 2003). In the present material, 82% of all treatments at the chiropractic clinics were concerning LBP patients, while this proportion was 27% at the physiotherapists and 10% at the GPs. No comparable data to these numbers have been found in Scandinavian literature, but a survey from USA in 2002 reported more than 70% of chiropractic patients seek care for neck and back related problems (Coulter et al. 2002). The present material supports previous findings that the medical doctor is the preferred caregiver by those who seek care for LBP (Carey et al. 1995, Côté et al. 2005). This may relate to the findings that there is less comorbidity and better health status among chiropractic patients (Hurwitz & Morgenstern 1997, Côté 2001).

LBP is a costly condition to society in terms of work absenteeism, health care utilization, and disability benefits. It is thought to be the most costly non-lethal condition in Norway, with an annual expenditure of NOK 13 – 15 Billion. 16% of all short and long term disability is due to back pain (Lærum et al. 2007). In 2002, a Finnish study found that one third of the direct back pain costs (health care utilizations) were spent on complementary therapies and that sick leaves accounted for 55% of the total costs (Hemmilä, 2002). There are marked individual differences in the consumption of health care, 75% or more of the costs of LBP can be attributed to 5% of the patients. The decisive factors do not appear to be any characteristic of the LBP; a major part of the difference is attributed to psychosocial factors (Frymoyer & Cats-Baril 1991). This is supported by the findings in a Norwegian study from 2002, where only 10% of the employees from 13 companies were involved in 82% of the sickness leave (Tveito et al. 2002).

1.3 The back pain revolution

1.3.1 The history

The concept of *'The Back Pain Revolution'* was introduced by the leading back pain researcher and orthopaedic surgeon, Gordon Waddell, in 1998, in his book with the same title (Waddell 2004 (a)). This is how Waddell described the most common condition LBP as a major problem:

"Back pain is a 20th century medical disaster. We can split the atom and send men to the moon and now we have cures, which past generations would literally have thought were miracles. We have vaccines to prevent polio and drugs to cure tuberculosis. We have high-tech investigations that lay bare the anatomy and pathology of the spine. We can perform bigger and better operations. Yet we have no answer for simple backache. Modern medicine has been very successful in treating many serious spinal diseases, but this traditional approach has failed with back pain. For all our efforts and skill, for all our resources, low back disability is getting steadily worse. Trends of

rising work loss, early retirement and state benefits all expose our failure to solve the problem. In western society, simple back strains now disable many more people than all serious spinal diseases put together." (Waddell 2004 (c))

The paradox, according to Waddell, is that despite medical advances and modern imaging techniques, the aetiology of simple backache remains unknown. Therefore, the traditional thinking of this problem as an orthopaedic condition must be replaced by a far broader understanding.

These notions were already put forward by other leading researchers, like Rick Deyo, who in 1996 stated that:
"Orthopaedic surgeons are focused on the lumbar spine, its anatomy, and interventions to alter its anatomy. That is the orthopaedic challenge. On the other hand, back pain is not an anatomic lesion but a symptom. The primary care physician must decide how to evaluate and treat patients who walk in with the symptom, which may or may not have anything to do with the lumbar spine. The primary care challenge then is to treat a patient with a complex biopsychosocial problem in the span of a 15-minute visit." (Deyo & Phillips 1996)

Deyo urged to get the LBP patients out of the operating theatres and back to the physicians in the primary care. The first challenge for the GP according to Deyo is to search for "the needle in the haystack", namely the one of 150 patients with severe malignancy or neurological deficiency. Thereafter the physician must separate the majority of patients who will recover no matter if treated or not from those who are likely to develop chronic pain also regardless of treatment given (Deyo & Phillips 1996).

1.3.2 The biopsychosocial model

The lack of consistency between clinical signs, imaging findings and the various treatments offered by the wide range of professionals raises questions about earlier notions of the condition and require a broader understanding of LBP.

As a part of the *Back Pain Revolution*, Gordon Waddell offered the *biopsychosocial* model as the theoretical background for a broader understanding of the condition (Waddell 2004 (d)). In this model the back pain arises from a nociception of pain in the back due to any reason or tissue injury that cannot be identified. This pain may result in a greater or smaller dysfunction, not necessarily related to the magnitude of the injury, but as well as a function of how we perceive the pain.

The second element of this model is how people think and feel about the dysfunction, as determinants of how this affects them. This is beliefs and coping strategies. The degree of anticipation, anxiety, attention, and previous experiences reflect our perceptions of the pain, and establish the beliefs that in turn determine how we manage to cope with the actual pain.

Emotional arousal and psychological distress are closely linked to the pain and make the individual more or less concerned and attentive to the pain and dysfunction. According to Waddell (2004 (d)): “There is now a great deal of evidence that beliefs, distress and illness behaviour are powerful influences on low back disability”. The last element of the biopsychosocial understanding of LBP is the social interactions. Family, work and wider social networks influence how beliefs, coping strategies and illness behaviour develop. According to Waddell; chronic LBP disability can only develop with family and financial support.

1.3.3 The implications

This transfer of LBP from a medical, orthopaedic condition to a broader biopsychosocial understanding is still controversial and difficult to implement in daily medical practice. Many clinicians refuse to acknowledge back pain as anything but tissue damage in one or several of the structures within or closely related to the spinal cord. The development of a chronic state is, in their view, a result of failed treatment of these specific tissue injuries. Even if there is no scientific evidence for simple treatments, there is an abundance of such offers. There is a huge demand for simple solutions, and it is unlikely that this large market will disappear easily. A great number of actors in this industry will remain sceptical to claims and data that reduce the trust in their particular treatment.

Both health professionals and people in general seem to have great faith in imaging as a useful tool to establish the precise diagnosis of back pain. This results in a substantial overuse of imaging examinations (Espeland et al. 2001), which, according to a Scottish study, does not influence treatment or outcome (Gilbert et al. 2004).

1.4 Beliefs and sickness behaviour

There is not much data on the relationship between people's beliefs about LBP and coping strategies when experiencing an episode of back pain. Several authors have identified the various myths, misconceptions and beliefs about back pain, but their relationship to sickness behaviour does not seem to be fully understood.

In 1998, Rick Deyo presented seven myths reflecting beliefs held by the general public about back pain (Deyo 1998). The myths expressed traditional ideas about resting and harmful movements and activities that could provoke back pain. In 2003 Ihlebæk and Eriksen found these myths to be alive and well in the Norwegian public (Ihlebæk & Eriksen 2003) although to some extent abandoned by the health care professionals (Ihlebæk & Eriksen 2004). In Belgium in 2004 Goubert et al. found that misconceptions were widespread in the population, 77% believed in resting when the back hurts, 35% agreed that bed rest was the mainstay of therapy, and 42% that imaging examinations always could identify the cause of the pain (Goubert et al. 2004).

Beliefs, control, and coping strategies influence the assessment of pain (Moreno et al 1999), and, therefore, also the sickness behaviour (absence from work, health care consumption) elicited by the LBP condition (Waddell 2004 (d)). Negative attitudes and fear avoidance beliefs have been demonstrated to increase the risk of long-standing back pain (Linton 2000, Picavet et al. 2002, Grotle et al. 2006). Low levels of disability, low distress and low use of formal medical care are associated with the best self-coping strategies (Blyth et al 2005, Grotle et al 2005). Better community-based strategies may improve active, self-management for chronic pain (Blyth et al. 2005, Smith & Elliot 2005; Buchbinder et. al 2001).

People seem to have a great need for precise information when consulting their health care provider for back pain (Verbeek et al. 2004, Moffett et al. 2000). It has been suggested that the previously mentioned overuse of imaging diagnostics may be due to doctors' lack of knowledge more than their beliefs in imaging as a useful tool in a need for meeting patients' expectancies when the back hurts (Espeland et al. 2001, Werner & Indahl 2005).

1.5 Health related media campaigns

"Social marketing" has been used over the past five decades to improve people's knowledge and behaviour towards a number of health related issues (Stead et al. 2007). The issues have mostly been disease prevention, regarding breast cancer, tobacco and alcohol consumption, skin cancer etc., but also information about effective treatment has been focused in campaigns (Redman et al. 1990, Morton & Duck 2001; Grilli et al. 2002, Stead et al. 2007).

"The assumption behind social marketing was, and is, that well-honed and demonstrably effective techniques from the commercial business sector can successfully and efficiently be applied to advance social causes. The techniques, in a nutshell, were marketing analysis, planning, and control. They included functions such as market research, product positioning and conception, pricing, physical distribution, advertising, and promotion (…). The "social product" might be a consumable object (such as a contraceptive device), a practice (a one-time act or a more complex behavioural repertoire), or even an abstract belief, attitude, or value (like social justice)." (Walsh et al 1993)

The social marketing is thus taking into use principles of commercial marketing, but the goal is not focused on economic benefits, but rather on increased health welfare. This welfare may be on a personal or societal level. An important point is the voluntary change of behaviour, which implies that an alteration of behaviour must be recognised as a clear benefit by the individual.

In a recent review of social marketing effectiveness, a total of 54 interventions to increase physical activity and reduce consumption of tobacco, alcohol, and illegal drugs were evaluated. The authors concluded that "social marketing is a promising intervention" and that "it can be effective across a range of behaviours, with a range of different target groups, in different settings….." (Stead et al. 2007).

This is supported by a Cochrane review from 2002, reporting on the impact of mass media in general on health related issues. The conclusion of the evaluation of 20 studies was that mass media as a channel of communication could be effective both as an intervention campaign and as media coverage of health related issues (Grilli et al. 2002).

However, in a study on communication and health beliefs, Morton and Duck (2001) found that the impersonal nature of media affected beliefs about others, but not beliefs about one self. The authors stated "beliefs about others may have little direct effect on individual health behaviour", implying that the increased knowledge on a health matter may not necessarily have any impact on a persons' own behaviour. On the other hand, the authors also admitted that increased attention on a subject may have an indirect impact in a direct interpersonal setting, e.g. doctor – patient setting (Morton &, Duck 2001).

This is in line with the 'health belief model' by Janz and Becker (1984), which suggested that the individuals should believe they are at risk for negative health outcome in order to perform recommended health behaviour. Also Bandura (2000) focussed on the personal benefit for altered health behaviour to take place: the person must believe that the positive outcomes outweigh the negative outcomes, i.e. the burden by changing behaviour must be less than the believed gains, and the person must feel capable to perform this alteration.

1.6 LBP related media campaigns

Several countries have initiated media campaigns in order to improve beliefs about LBP in the general public. The first of these took place in Australia about ten years ago (Buchbinder et al. 2001 (a)) and gave the idea to the present Norwegian campaign. In Scotland, the former Health Education Board for Scotland (HEBS) accomplished a major public education campaign about back pain in October 2000 (Waddell et al. 2007), and an ongoing campaign in Canada will hopefully add more knowledge about such campaigns into the literature (Gross et al. 2005).

The Victoria WorkCover Authority Back Campaign, Australia, ran from 1997 to 1999 in the state of Victoria and aimed at shifting the general population's attitudes and beliefs about back pain**.** The VWA Back Campaign was developed according to messages in The Back Book, an educational booklet for patients based on the biopsychosocial model (Roland et al. 1996). The messages focused on staying active, exercising, not resting for prolonged periods, and staying at work. The campaign ran with varying intensity over 3 years. Television commercials were aired in prime-time slots and included dialogue by recognised national and international medical experts, sports and television personalities, and were endorsed by relevant professional organisations. The television campaign was supported by other mass media including extensive outdoor billboards and radio, but minimal printed advertisements. Copies were sent to all doctors, physiotherapists, chiropractors, osteopaths, and masseurs and also workers' compensation case managers, with the aim of providing it to patients presenting with back pain. All Victorian doctors received evidence-based guidelines for the management of workers with compensable low back pain. (Buchbinder et al. 2001(a))

The evaluation of the Australian campaign found a significant improvement in beliefs about LBP in the intervention state, both in the general population and among doctors.

There was also a clear decline in the number of claims for back pain, rates of days compensated, and costs of medical care (Buchbinder et al 2001 (a), Buchbinder et al. 2001 (b)). Although some decay, the authors have found these positive beliefs sustained both in the general population and among doctors 3 and 4.5 years respectively after the cessation of the campaign (Buchbinder & Jolley 2005, Buchbinder & Jolley 2007). Unfortunately, all evaluations on reduced sickness absence have been without any control group.

In a recent comparison of the three media campaigns in Australia, Canada and Norway, an interesting feature is that all three seem to have chosen a different mass medium as their primary medium (Buchbinder et al. *In press*). In Australia, celebrities delivered the messages in commercials on television and great outdoor billboards (Buchbinder et al. 2001 (a)), while in the Canada campaign an Olympic gold medallist in addition to health professional associations and respected physicians expressed the messages, primarily in radio advertisements. Also posters and pamphlets were distributed to employers, city facilities, medical clinics, hospitals, and other health units (Buchbinder et al. *In press*). The Scotland campaign was conducted through radio advertisements and a web site and achieved extensive free press and television news cover due to support from a well-known Scottish sports personality (Waddell et al. 2007).

The literature and the knowledge about the efficiency of mass media campaigns about LBP beliefs are yet limited. Particularly, the impact of changed beliefs in the general public in altering sickness behaviour among LBP patients is currently only shown in the Australian study (Buchbinder, et al. *In press*). However, because mass media campaigns have been found to be efficient in other health related issues, it seems reasonable to assume its benefit also in the field of LBP.

1.7 The Norwegian campaign – *“Active Back”*

The Norwegian National Back Pain Network was founded in 1999 on a governmental decision, based on the magnitude of the costs and implications of LBP in the society. There were two main tasks for the new organisation. One was to continue the governmental support for an established network for Norwegian LBP research and researchers, with a central scientific support unit, located at the University of Bergen (the Research Unit). The other task was implementation of the results from LBP research into daily practice. Establishment of a network of key clinicians from various disciplines and locations throughout the country, and development of the Norwegian Guidelines were important part of this implementation. This “Communication Unit” was localised to a University Clinic in Oslo (Oslo City Hospital).

In 2002, the Norwegian Back Pain Network, the Communication Unit, launched the first multidisciplinary guidelines for the management of acute LBP (Nor Guidelines 2002), which founded the theoretical basis for the messages in the *‘Active Back’* campaign. The authors of the guidelines had both clinical and research experience, and represented several medical disciplines as well as physiotherapy and chiropractic. The guidelines were based on published evidence found in systematic literature reviews and similar guidelines from other countries, including the European guidelines for treatment of acute LBP (Burton & Waddell 1998, Koes et al. 2001, van Tulder et al. 2002). The guidelines gave clear and specific advice on the proper treatment of acute LBP patients.

Following an introduction of definitions, epidemiology, and methods used for the work, the Guidelines presented the diagnostic triage and gave advice on the clinical examination. Several common treatments were then graded according to benefit and the level of the evidence for the grading was given. The Guidelines also provided information about patient communication and cooperation between primary and secondary care.

The Guidelines were distributed in short version to all actual professionals with authorisation for LBP treatment in Norway, i.e. doctors, physiotherapists and chiropractors, through their respective associations' journals. The Guidelines achieved substantial attention, both among different professional groups and also in the media. There was some resistance and opposition, mainly directed at the diagnostic limitations of the diagnostic triage. Some clinicians refused to abandon their own experience with a traditional medical view on LBP.

At this time, the Australian Victorian Work-Cover Authority campaign had presented their results of their media campaign (Buchbinder et al 2001 (a), Buchbinder et al 2001 (b)). This inspired The Communication Unit to invite particular professionals from two Norwegian counties that had shown special interest in LBP to discuss a Norwegian model of a media campaign based on the Australian project. These meetings took place at the Rehabilitation Hospital in Stavern where the well-recognised Norwegian researcher Aage Indahl was employed, and were conducted simultaneously with the introduction and presentations of the Norwegian Guidelines

2. Materials and methods

2.1 Organisation of the *'Active Back'* project

The *Active Back* project aimed at addressing not only the general public through a media campaign, but also the health care providers, the social security officials and the work places. The idea behind this was a notion of that "wherever the LBP sufferer turns himself, he should meet the same messages"; and that it would be important to "have all players on the same side" to avoid conflicting interests and professionals working against the project. Endorsements of all messages of the campaign were obtained from all the professional unions; The Norwegian Medical Association, The Physiotherapists Association and the Chiropractors Association.

The project was organised with professor Even Lærum (the head of the Communication Unit) as Chair of the Steering Committee, Aage Indahl as Medical supervisor, Erik Lindh as project leader, Øyvind Sørbrøden as supervisor of liaisons with work places, Bjørn Loge as representative of the patient organisation and Erik L Werner as researcher. The ownership of the project was initially shared between the Back Pain Network and the Rehabilitation Hospital; later the Rehabilitation Hospital took complete responsibility for the management of the project.

2.2 Design of the study

The study was designed as a quasi-experimental before, during, and after campaign survey. The aim was to follow changes in Knowledge, Attitudes and Practices (KAP) particularly in the general public, but also among the professionals and the employees exposed to the project.

The data collected were based on telephone interviews, questionnaires, reports of sick leave and records of the health care consumption. Vestfold (221 000 inh.) and Aust-Agder (104 000 inh.) counties were selected for the intervention, and Telemark (166 000 inh.) situated in between these, was selected as control county. The possibility of containment was considered low, and the equality of the demographics between all three counties spoke in favour of Telemark as control.

Special questionnaires were designed for the general public, the employees, and the professionals. The questionnaires to the employees were delivered and collected at the different work places by the project leader. The questionnaires to the health care providers were delivered and collected by mail, and a pre-stamped envelope for return was attached to all questionnaires. The questions to the general public were accomplished as a telephone interview. A professional poll company was hired to perform 500 interviews in the three counties at all three times.

The measurement of sick leave was based on data from the Norwegian National Insurance Administration. A special agreement made it possible to have exact data on sick leave for all reasons and on the LBP diagnoses for the whole country, for the three counties separately, and for all the six cooperating companies.

There was no national register for surgery or imaging examinations on back pain. We were therefore obliged to collect these data manually. There are four hospitals with orthopaedic service, and four hospitals and three private institutes with radiological services in the three counties. All of these agreed to summarise and deliver their numbers of back pain surgery and imaging examinations at all three measurement points.

2.3 The messages of the campaign

The basis for the campaign message was the 7 myths of Rick Deyo and the Norwegian Guidelines. The steering committee had a clear vision that the messages should be concrete and simple, and after several discussions the following 5 statements were chosen:

- X-rays rarely show the reason for back pain
- Work with your back! – One recovers faster if one returns to work as soon as possible, even if the back is still hurting.
- Back pain is rarely caused by any dangerous illness
- A back in motion improves faster
- Only a few persons with back pain need surgery

All advertisements of the campaign focused on one or several of these statements.

2.4 The *'Active Back'* media campaign

The design with two counties for the campaign, and one county as a control, restricted the media campaign to involve local media only. In Aust-Agder the newspaper "Agderposten" covers the whole county, while Vestfold is served by three major local newspapers. In both counties, local TV would cover the whole county, but had small rating numbers. Local radio covered only a small proportion of the population.

At four different times during the campaign, a specific 16-page pamphlet in the size of a newspaper was distributed to all households in the two counties together with their local newspaper. The pamphlet was written by members of the steering committee and professional journalists, and contained different items about back pain. The 5 statements were repeated and explained, patients that had recovered successfully by advice in line with these messages were presented and more profound articles about the scientific basis for the campaign were published.

A web site was established and updated constantly through the project period. This site contained the same messages and information as the pamphlets, in addition to specific advice for self-coping and management of back pain. It also offered links to other sites with information in line with the project.

In addition, a humorous animation figure was created to present the messages on the commercials sent on local TV and cinemas, and a radio commercial was also made. Posters were printed and delivered to all health clinics, pharmacies, social security offices etc. Four different posters were distributed, each containing one of the statements and illustrated by the animation figure. For chronological listing of all activities, see Appendix 1. The posters are presented in Appendix 2.

2.5 The *'Active Back'* and the health care providers

The initiatives towards the health care professionals were limited to one major multidisciplinary conference in each county, and a separate one for the physiotherapists. In addition, all professionals received information letters during the campaign and a number of different posters for their waiting rooms. It is also reasonable to believe that the questionnaires that were sent at three times before, during, and after the campaign, served as a part of the deliverance of the messages of the campaign.

2.6 The *'Active Back'* and the social security offices

The project did not reach every social security office in each community with personal meetings, but had continuously and well-established contacts with the county offices in Vestfold and Aust-Agder. All offices were provided with the posters, and through internal communication the officers were informed of the campaign.

2.7 The *'Active Back'* work place initiative

In both counties, three different companies were invited to be included in a specific intervention, and all agreed to participate. The work places were of different sizes, locations and branches; the final selection was one hospital, one ferry line, two factories, one insurance company, and one mechanical industry. In total, these companies had 3500 employees with all kinds of working conditions.

In all of the work places, a deep understanding for the project was established in the management, which made it possible to introduce both the idea of the "peer support" and meetings with the employees, union leaders etc.

At each working place one or several "peer supports" were engaged to take part in the project. These "peer supports" should be one of the fellow workers, but in practice most often it became a union leader, a foreman, or one from the personnel office. The idea of the “peer support” was to have one non-medical person at the work place to be the first to assess and advice the employee that experienced an episode of LBP. With any doubt about the condition being an acute non-specific LBP, the person would be advised to seek professional care. Most such episodes, however, occur as a recurrence of previously experienced episodes, and would be recognisable for the person himself. The training of the “peer supports” focused repeatedly on recognition from previous LBP and lack of general discomfort as obligatory for everyone who was advised not to see a medical doctor.

Being sure about the condition, the “peer support” would advice the fellow worker to stay at work, doing modified work, and by this put the messages of the campaign into practice. The “peer support” offered a small discussion about the condition, aiming at increasing the person’s self-coping strategies, avoiding passive treatments and to feel secure about the good prognosis by pointing at the person’s previous experiences.

Before and during the project, all “peer supports” were gathered together several times to be instructed in their tasks, and to make these people feel secure about LBP. They were taught about the self-limiting unspecific LBP, and particularly about red flags and conditions that could represent something that should be referred to medical personnel.

2.8 Questionnaires and data collection

2.8.1 Questionnaires

We developed three questionnaires, one for each population in the study: the general public, the health care providers, and the employees in the intervention work places.

Each of the questionnaires was to be answered before, during, and after the campaign by each of the populations, i.e. April 2002, April 2004 and June 2005. (See Appendix 3)

The public. The questionnaire for the general public consisted of three sections; one about demographics (gender, age, income etc.), one about personal back pain experiences, and one about beliefs about LBP. The respondents of the questionnaire were 500 randomly selected people in each of the three counties. A poll firm (TNS Gallup) was engaged to collect the responses by a telephone interview at the three times of data collection. To ensure a sufficient number of responders, the interviewers kept on calling randomised people until the number of 500 was obtained in each county.

The health care providers. The questionnaire for the health care providers also consisted of three sections; one about personal backgrounds, one about interpretation of different signs and symptoms of LBP and practical advises and treatment the providers would prefer at different LBP conditions, and one about beliefs about LBP. The questionnaires were sent out by mail to every doctor, physiotherapists, and chiropractor in primary care in the three counties at each data collection time. Those who returned the questionnaire unanswered by referring to a practice without relevance for the study (mainly administration, specific patient population etc.) were excluded from the study and did not receive a questionnaire at the next data collection. The names and addresses of the professionals were provided by their respective unions. All questionnaires were enclosed a pre-stamped envelope for response. The providers were given one reminder if the questionnaire was not returned within a given time.

The employees. The questionnaire for the employees were mostly identical to the questionnaire used in the telephone survey in the general public, but consisted in addition of a section describing personal work conditions. The questionnaires were delivered at each of the work places personally by the project leader and returned collected by mail. In the third emission of the questionnaire to the work places, there was an error in printing, the respondents that did not have personal experiences with back pain were asked not to respond to the statements about beliefs about LBP.

2.8.2 Sickness absence

The data was delivered by the Norwegian National Insurance Administration, and reflected the total and the back pain related sickness absence documented by doctor. The diagnostic codes L02, L03, L84, and L86 in the International Classification of Primary Care (ICPC-2) were used. In Norway, employees can have three or eight days of self-reported sickness absence (depending on the employer's agreement with the Social Security Office) before they need a doctor's certificate. Workers compensation is granted from first day of sickness absence for all employees. Absence from work of less than three or eight days is not included in this study.

The numbers of sickness absence were collected as 'numbers of absence days in percent of total numbers of possible working days' per period of three months four times per year. We also collected 'number of claims' in the same periods. The numbers were collected for the whole country and for the three counties separately. They were also collected for each of the work places in the study separately.

We collected data on sickness absence for the whole year before campaign (2001), for the first whole year during campaign (2003), and the year of conclusion of the campaign (2005).

2.8.3 Surgery rates and consumption of imaging

There is no national register on back-related surgery or imaging. We collected these data directly from the health providers. The data collection followed the same intervals as sickness absence, counting all patients in 2001, 2003, and 2005. The actual surgical and radiology departments at the hospitals and private institutions in each of the three counties were asked to calculate manually the number of LBP imaging performed in the study period.

In Aust-Agder it is only one public hospital and no private alternatives in the county. Many patients from this county are referred to a private imaging institute in the neighbouring county, Vest-Agder, and we have included patients from Aust-Agder at this private institute in Vest-Agder in the study. In Vestfold there are two hospitals with back surgery service, and in addition to these two hospitals one private radiology institution. In Telemark there is one hospital with orthopaedic and radiology service and one private radiology institution that opened in 2002. We succeeded to have the numbers from all these institutions at all data collection times.

2.9 Ethical aspects

In this study, the general population was not followed on an individual level. The objects for telephone interviews were anonymous and randomised at each time (2002, 2004 and 2005). The respondents were informed about the purpose of the interview and the interviewer obtained oral consent. Also the data on sickness absence and sickness behaviour were analysed on a population level without any individual identification. Due to the lack of personalised identifiable data approval from the Regional Committee of Medical Ethics was not needed.

The intervention at the six cooperating workplaces followed a thorough information and endorsement by the management and the employees represented by the unions at each workplace. Neither the analyses of the sickness absence data in these companies were identifiable on an individual level. Following our correspondence with The Data Inspectorate a general consent for participating in the project and use of sickness absence data were obtained at each company.

The health care providers were informed about the project and use of data in a separate letter attached to the questionnaires at each time (2002, 2004 and 2005). The responses were anonymous, but all schemes were numerated so that the individual could be followed in a logistic regression model for analyses. Responding to the questionnaire was regarded as acceptance of the use of the data.

2.10 Statistical analyses

SPSS (v 11.5 - 14.0) and SAS, Version 9.0 was used for all statistical analyses. A p-value <0.05 was considered statistically significant. Missing values were excluded.

All questionnaires were designed particularly for this study. The written questionnaires were collected and programmed at the Research Unit of Norwegian National Back Pain Network in Bergen. A poll company, TNS Gallup, accomplished all telephone interviews. Data on sick leave were collected from the National Insurance

Organisation, while data on surgery rates and imaging examinations were collected directly from all health institutions in the actual area.

2.10.1 Paper 1

SPSS 11.5 for Windows was used for the statistical analyses. Before the analysis the responses to the statements were categorized into disagree (totally disagree and disagree), unsure (neither disagree nor agree) or agree (agree and totally agree). Frequencies of disagree, unsure, and agree were calculated for all the statements in both populations. The results were related to experiences of LBP in the past or present, and whether or not health care was sought for the last episode of LBP, and differences tested with Chi-square tests. Only the 1031 persons who visited one of the three professions exclusively were included in this analysis, and the 150 persons who sought care at more than one health care provider were excluded in this analysis.

For the three professions of health practitioners, the frequencies of disagree, unsure, and agree, were calculated separately.

2.10.2 Paper 2

Data from the campaign counties were pooled and compared with data from the control county. Differences between the campaign and control counties were tested with logistic regression for each year, including gender, age, education, and current LBP status in the analyses to control for possible differences between the samples. To examine the overall effect of the campaign over time, a sum-score for all statements was constructed (range 5-35, with 35 being the best score). If less than 57 % of the values within the sum-score were missing, mean values of the other items of that scale for that individual were computed; otherwise, the scale was regarded as missing. Only 4.3% (N=121) had more than 57% missing (less than 4 of the 7 statements answered), and there were no important differences between subjects with or without missing data, except that those with missing data were a little older (mean age: 52 (CI: 48-55)) than those without (47 (CI 47-48)). A GLM univariate covariance analysis (type III) was conducted, using the sum-score of all statements as the dependent variable and time, control/intervention, gender, education and current LBP as fixed factors. Age was entered as a covariant. An interaction variable of time X control/intervention was used to test the effect of the intervention over time. To test for homogeneity, Levene's Test of Equality of Error Variances was used. SPSS 11.5 for Windows was used for all statistical analyses.

2.10.3 Paper 3

Descriptive statistics were calculated to describe the sample of health providers. Percentages of providers agreeing with campaign messages were calculated. To determine changes in provider beliefs from baseline to after the campaign, proportional odds regression models (logistic models) for repeated measures were fitted using Proc GLIMMIX in SAS, Version 9.0 (SAS Institute Inc., NC, USA). In these models the changes in beliefs for the different outcome variables were measured on a three level ordinal scale (1=disagree, 2=unsure, and 3=agree). Independent variables in these models were time (1/2), county (intervention/ control), profession (doctors, physiotherapists and chiropractors), and all the second and third order interactions. Significance testing was also conducted to determine differences between those reporting exposure to the campaign and those who did not report seeing the campaign.

SPSS 14.0 for Windows was used for the descriptive analyses and an alpha level of 0.05 was chosen to judge statistical significance.

2.10.4 Paper 4

SPSS 14.0 for Windows was used for statistical analyses. Only respondents with personal experiences with back pain were included in the study. Files of responses from each of the three questionnaires were merged into one file and the responses were recoded so that the highest value was in line with the project messages.

3. Results and summary of the papers

3.1 Paper 1: Beliefs about LBP in the Norwegian general population: Are they related to pain experiences and health professionals?

The aim of this study was to explore whether people's beliefs about LBP were related to personal previous experiences with back pain, and/or to the profession chosen for care giving at the last episode of back pain.

The material consisted of telephone interviews with 1181 randomly chosen people, and 974 postal questionnaires answered by doctors, physiotherapists and chiropractors in the area.

The results revealed that people that had experienced back pain previously had more optimistic beliefs about LBP than those who currently had back pain when interviewed, or those who never had experienced any back pain. There were differences between the provider groups. The chiropractors seemed to have lesser belief in spontaneous recovery from an episode of LBP than doctors and physiotherapists. The study also demonstrated a relationship between beliefs held by the individual and the profession they had chosen at their last episode of LBP.

The conclusion of this study was that recovery from back pain might have impact on beliefs about back pain, in opposite to those who actually were in pain and those who never had experienced back pain, who were more pessimistic in their views. We do not know whether people’s beliefs are influenced by their professional caregiver, or whether they seek caregiver in line with their own preferences.

The fact that those who had experienced recovery from back pain were most in line with the lessons from the modern knowledge about LBP, could be interpreted as a confirmation of the validity of these. The study also underlines that the beliefs about LBP held by the professionals matter in their treatment of back pain patients.

The implication of this study was 1) a need for an educational intervention towards the general public in order to improve their understanding of common back pain as a normal self limiting condition where maintenance of normal activity is of benefit for recovery, and 2) a similar educational intervention towards the health care providers in order to improve their professional attitude in the meeting with the LBP patient.

This led to the next study, which was an evaluation of the intervention we chose:

3.2 Paper 2: Low back pain media campaign: Effect on beliefs, but not on sickness behaviour

The aim of this study was to evaluate whether people’s beliefs and behaviour would be influenced by a media campaign directed towards the general public.

The material consisted of telephone interviews with 1000 randomly selected people from two counties that had been exposed to the campaign compared with 500 persons from a neighbouring county serving as control. The interviews were performed before, during and after the conclusion of the campaign, and the respondents were different people each time.

In addition, data on sick leave, and frequencies of imaging examinations and disc herniation surgery was collected at the same intervals.

The results showed a small but statistically significant improvement in beliefs held by the public exposed to the campaign as opposed to those in the control county. However, this did not lead to any corresponding change in sickness behaviour.

The conclusion of this study was that the improvements in beliefs observed were to small to produce changes in sickness behaviour, probably due to a maximum attention rate of 39% in the intervention counties.

The implication of this study was that a much larger investment in a campaign probably is necessary for having impact on people's behaviour, and as this study not confirms the results of the Australian study the effect of media campaigns directed towards the general public and health care providers seems somewhat unclear.

In order to try to understand why improvements in beliefs not led to any changed sickness behaviour, it was natural to look deeper into the health care providers; were they affected by the campaign?

3.3 Paper 3: Health care provider back pain beliefs unaffected by a media campaign

The aim of this study was to examine whether LBP beliefs changed among the health care providers exposed to a media campaign with additional activities for the professionals.

The material consisted of postal questionnaires to all doctors, physiotherapists and chiropractors in primary care in the two intervention counties, with a neighbouring county as control. The 243 providers that answered the questionnaire both in 2002 (before) and 2005 (at the end of the campaign) were included in the study and followed with logistic models for repeated measures.

The results showed an attention rate close to 100% among the providers in the intervention counties. However, although the beliefs held by the professionals in general improved during the campaign period, we were unable to relate this to the campaign since the same change appeared in the control county. The differences between the provider groups seemed to increase during the period.

The conclusion of this study was that particularly the differences in the view on self-recovery between chiropractors and doctors seemed unaffected by the deliverance of the knowledge that specific treatment for LBP is of limited value and that most episodes of back pain recover regardless of the given treatment.

The implication of this study was that delivery of new insight and knowledge about LBP to the health care providers was not sufficient to change beliefs and most probably not the daily clinical practice.

It seemed though from this that the attention rate could not explain alone why the campaign had not led to any reduction in sickness absence in the population. We were therefore eager to look into the last element of the campaign; the work places that were provided with an extra effort.

3.4 Paper 4: Peer support in an occupational setting preventing LBP related sick leave

The aim of this study was to evaluate whether the addition of peer support in an occupational setting would increase the effect on modifying the beliefs about LBP held by the employees that also was exposed to the media campaign.

The material consisted of written responses on questionnaires to all 3500 employees in the six collaborating workplaces. The intervention was a combination of general information about back pain in addition to the media campaign that ran in the area simultaneously, and personal advice and support provided by a specific trained peer adviser at each workplace.

The results showed a significant improvement in beliefs accompanied by a total work absence decrease by 27% and LBP related work absence by 49%.

The conclusion of this study was that personal advice and support given in an occupational setting seemed to have additional effects to the media campaign.

The implication of this study was that while a small improvement in beliefs in the general public did not lead to changes in sickness behaviour, it seems from this study that the additional effect of an intervention in the occupational setting had a substantial effect on reduces sickness absence due to back pain.

3.5 Overall summary of papers

In the first paper we demonstrated widespread misconceptions about LBP in the general Norwegian public, in line with previous studies. We also revealed coherence between peoples' beliefs about back pain and their own experiences on the one hand, and differences between the professionals' beliefs, and we also found a connection between the beliefs held by the public and their preferred health care provider.

These findings promoted an attempt to reproduce the results of the Australian Victorian Work-Cover Authority media campaign which had demonstrated significant improvements in beliefs about LBP in the general public and among the physicians, and also produced a substantial decline in sickness absence from work.

Due to the limited resources provided for the intervention, and the aim of targeting several groups with a multifaceted intervention, the scale of the principal intervention, the media campaign, became much smaller than the Australian campaign. This could be beneficial: if a smaller scaled campaign also demonstrated improvements in beliefs and sickness behaviour, it would be easier to carry out elsewhere.

The results of the evaluation of the effect of the campaign on the general public were somewhat disappointing: there was a small but significant improvement in the beliefs held by the public exposed to the campaign, but too small to produce any changes in sickness behaviour.

We knew from the first study that there was a link between patient beliefs about LBP and the group of professional they sought at their last episode of back pain. This finding promoted the additional intervention towards the health care providers. The first study also revealed differences in the beliefs between the professional groups, and the aim of the specific intervention towards the professionals would then be to reduce these differences. Because people get frustrated about the diversities between the professionals, this could be an obstacle for any change in sickness behaviour. Unfortunately the campaign did not diminish the differences between the professionals, although there was a tendency of general improvements in their beliefs.

In order to complete the *Active Back* campaign as a multifaceted project, we also accomplished an additional initiative at six cooperating work places. As opposite to the passive, general societal marketing of the messages of the campaign, the close link to the work place and the personal deliverance of the messages seem to have made significant changes in sickness behaviour and beliefs about LBP.

3.6 Summary of conclusions

The Active Back campaign seemed to be too limited and small scaled to produce changes in LBP related sickness behaviour and despite an attention rate close to 100% among the health care providers, the differences between the professionals seemed unaffected by the campaign. The additional intervention at the work places seemed to produce the desired effects with both improvements in beliefs and significant reduction in sickness absence due to back pain.

4. Discussion

4.1 Media campaigns

In this study we demonstrated that a limited small-scaled low-budget media campaign directed to the general public did not effectively change sickness behaviour in the sense of work maintenance. However, it seems likely that a greater investment in a campaign could make greater improvement in beliefs, which could have resulted in changed sickness behaviour.

In the literature, an awareness of 70% is regarded as average for media campaigns and constitutes a major factor for success (Cavill, & Baumann 2004). The exact level of improvement in beliefs to produce altered sickness behaviour remains unknown. The Victorian Work-Cover Authority public health campaign of 1997-99 achieved an attention rate of 86% and a mean improvement on the Back Pain Beliefs questionnaire of 3.2 points (Buchbinder et al 2001 (a)). This was a 9-statement questionnaire with a possible score 9-45. The improvement in our study was 1.6 points on a 7-statement questionnaire. Although most of the statements were similar to the statements used in our study, the wordings and content of campaign messages makes a direct comparison difficult.

Psychological and social science literature have long argued that a change of behaviour is a complex process, and that improved knowledge is not sufficient to produce behaviour changes (Ajzen, & Fishbein 1977). The health belief model (Janz & Becker 1984) suggests that individuals must believe they are at risk for having serious negative health outcomes in order for them to perform recommended health behaviour. Social cognitive theory (Bandura 2000) contends that there are two main factors that influence someone in adopting a health-protective behaviour: 1) they must believe that the positive outcomes outweigh the negative outcomes, and 2) the person must feel able to perform the behaviour. A third theory of health behaviour is the theory of reasoned action (Ajzen, Fishbein 1980). This theory proposes that behaviour is determined by the strength of intentions, which is in turn influenced by the person's attitudes and perceived subjective norms.

Societal marketing campaigns have been used in a great variety of health issues to perform better understanding, knowledge and improved self care, regarding tobacco consumption, sexual transmitted diseases, breast feeding, skin cancer etc. (Stead et al 2007). The results of these are conflicting (Cavill & Baumann 2004; Grilli et al 2002). According to the social science literature referred above, it seems likely that an effect of campaign messages will affect the individuals differently. The individual will have to assess whether the possible benefit from the advices exceeds the burden of staying active through the pain period, and to which extent the individual will be capable to do so. This may explain the relationship we found with previous LBP experiences and beliefs held by the public; those who had experienced and recovered from LBP were more positive than those who never had had any personal experiences with back pain or those who were in an actual state of pain when asked. Maybe those with the personal experience of recovery had experienced the benefit of staying active through the pain.

The characteristics of our campaign differ in several ways from the Australian campaign (Buchbinder et al. *in press*, Waddell et al. 2007). The ongoing Canadian campaign has local radio advertisements as the main media channel, like also the Scotland campaign had, and the Australian, the Scotland and the Canada campaigns were all based on the same Back Book (Roland et al 1996). A comparison of the Australian, the Norwegian and the Canadian media campaigns revealed the differences in communication strategies and media formats used in the three campaigns and pointed out the lack of underlining guiding theory of health behaviour change in all these three campaigns (Buchbinder et al *in press*). “Theoretical approaches may provide a better understanding of the mechanisms of the campaign effects as well as a basis for choosing the best message to produce the intended outcome” (Buchbinder et al *in press).*

Generally mass media intervention is regarded as an effective tool to improve individual sickness behaviour (Grilli et al. 2002). In as systematic review of 54 interventions from 2007, Stead et al. (2007) concluded that although the definition of “societal marketing” varies, these interventions have shown efficacy in a range of health related issues. Others argue that the short-term effect of an increased awareness to the actual topic does not necessarily make long lasting effects. Therefore, campaigns should focus more on social norms and policy and environmental changes to bring about long-term changes (Cavill & Baumann 2004). However, the authors of the Australian study recently published sustained effect of their campaign three years after its cessation (Buchbinder & Jolley 2005).

It is also argued that health promotion strategies do not seem to reach all segments of the target population equally, and that there are demographic and different characteristics determining who benefits from media campaigns (Bower et al 2005). Ihlebæk & Eriksen (2003) found a strong association between low education and unbeneficial beliefs in the general population in Norway. Unpublished material from our study tend to show that all segments of the population seemed to improve their beliefs in the intervention counties, but their starting and ending points were somewhat different. Lower socio-economic groups started and ended at lower degree of agreement with the messages of the campaign, but their relative improvement was equal to those of higher socio-economic groups. The authors of the Australian study were unable to find characteristics to determine who benefited most from their campaign (R. Buchbinder, *personal communication*).

Further studies are needed to determine the most efficient design and methods of societal marketing to improve self-care and reduce consequences of LBP.

4.2 The health care providers

Our findings of the correspondence between beliefs about LBP held by the public and their preferred health care provider when experiencing LBP demonstrates the importance of the attitudes of the provider. These attitudes have previously been found to be mostly in line with the guidelines. In 2004 Ihlebæk and Eriksen stated that the Norwegian physicians and physiotherapists seemed updated on the newest holdings on treatment of LBP but they had not been able to communicate these perceptions to the public (Ihlebæk & Eriksen 2004).

In the 2002 survey of this material we also found the professionals to have knowledge, attitudes, and practices mostly in line with the lessons from the guidelines (Werner & Indahl 2005). We did however, also find some differences between the provider groups that also seemed to persist after the campaign. In a comparison of beliefs and behaviours of family physicians and chiropractors, Cherkin et al. (1988) found that "Family physicians think that most back pain is caused by muscle strain, that lumbosacral radiographs are rarely useful, that appropriate therapy does not depend on a precise diagnosis, and that pain will usually resolve within a few weeks without professional help", as opposed to the chiropractors.

Houben et al. (2004) discussed the beliefs of the health care providers as reinforcement of the patients' beliefs. In a study on physiotherapists and chiropractors they found a strong relationship between pain and impairment and a perceived harmfulness of daily activities for the backs of patients with back pain. This may have implications on treatment behaviour of the providers (Houben et al. 2005), in particular fear-avoidance may be projected from providers to their patients (Linton et al 2002).

The beliefs held by the professionals are thus of great importance in several aspects. People get frustrated by the lack of consistency among the professionals regarding treatment and understanding of the problem (McIntosh & Shaw 2003, van Tulder et al. 1997). It also affects the advice and information given to the individual patient, and seems also to influence the examinations performed and the treatment given. In the current study, we have argued that the small effect of the media campaign may correspond to a limited awareness in the public. However, the lack of improvement in beliefs among the health care providers despite an attention rate close to 100% demands other explanations. The professionals seemed to be fully aware of the messages of the campaign and yet they did not seem to get influenced by this.

Barriers to adherence to the guidelines among the professionals have been recognised by many, and several attempts have been carried out to improve the professionals' practices. Patient satisfaction seems to be a key factor for cooperation with recommendations given (Hall et al 1998). The professionals want to meet the patients' expectations. The question is how this satisfaction can be achieved, when patients' expectations to the encounter with their provider is to obtain a precise diagnosis and instruction for recovery (Verbeek et al. 2004), which hardly can be met with our limited understanding of the mechanisms producing back pain.

The non-adherence to the guidelines by health care providers has been found to relate largely to the influence of the patients (Schers et al. 2000; Espeland & Bærheim 2003). Both patients and physicians seem to share the opinion that doctors should give in to the demands of their patients (Schers et al. 2001). This may be a part of an explanation to why the provider groups in our study seemed to be unaffected of the messages of the campaign. The impact of what the professionals interpret as the patients needs exceeds the impact of the evidence. It is also possible that the understanding of LBP as a self-limiting condition may be felt as a threat to the professional platform for some of the providers, it may reduce the importance of the specific treatment they offer.

In Norway, chiropractors and manual therapists recently are acknowledged as primary contacts regarding muscle skeleton disorders with rights to refer to medical specialists and report sick leave for a limited period of time. The reason for this was the authorities' belief in manipulation as a curing treatment, and that the detour to the doctor only delays the recovery at the chiropractor. Also on this background it is likely to understand that the view of manipulation as a purely pain relieving treatment, while recovery happens spontaneously, oppose the chiropractors' own understanding of their treatment.

This may explain the sustained differences between the provider groups, particularly in their understanding of LBP recovery. In this aspect, the transition of thinking about back pain as a biomedical injury to viewing LBP as a multifactorial biopsychosocial pain syndrome does not seem to have reached all the professionals (Borkan, et al. 2002).

A Dutch study was unable to find a positive cost-benefit factor in a comparison of patients receiving a particular intervention aiming at psychosocial prognostic factors and usual care at their family doctor (Jellema et al. *In press*). This suggests that although the physicians change their management towards a psychosocial understanding of the patients' complaints, this is not necessarily sufficient to produce better outcome. This calls for further studies on how to implement the modern understanding of the LBP condition.

4.3 The additional effect of the peer support

The results from the intervention in the occupational setting were remarkable. We do not know the effect of each element of the intervention at the work places; would these results have been obtained without a simultaneous societal marketing campaign? Were the results due to the information given, or to the peer support, or to the modifications at work offered, or were all elements necessary to produce the quite substantial decline in sick leave?

In Canada, the Sherbrooke model more than a decade ago consisted of a combination of a clinical rehabilitation intervention and an occupational intervention including ergonomics (Loisel et al. 2002). This model was found to return workers to regular work 2.4 times faster than the usual care (Schultz et al. 2002), with a mean saving of CAD 18 585 per worker (Loisel et al. 2001). A randomised comparison between early interventions by occupational physicians and normal care from the Netherlands, did not find significant differences in sick leave between the groups (Verbeek et al 2002). A recent Australian study, however, showed that an immediate intervention by an occupational physician trained in evidence-based LBP care achieved significantly earlier return to normal duties than those in usual care (McGuirk & Bogduk 2007). A similar early intervention by health care providers in primary care have been found to influence on the return to work simply by playing a proactive role towards the work places and patients (Kosny et al. 2006).

There are differences between all reported interventions. The Sherbrooke model, like most initiatives, consisted of a rehabilitation program for those already on work absence, which makes it difficult to compare to other models aiming at keeping the injured workers at the workplace through the episode of LBP. The Dutch and the Australian interventions have similarities to our project, but in both cases occupational physicians assessed the injured workers. While the Australian initiative reacted within 48 hours after an employee reported back pain, and all participants were seen by the same physician (McGuirk & Bogduk 2007), the Dutch project consisted of several physicians that intervened 10 days after the injury (Verbeek et al 2002). In our model, the workers were not seen initially by any health professional at all, only by special trained "peer advisers".

It is our conclusion that the results achieved at the six work places in our study would not have occurred without the multifaceted intervention of reassurance and delivery of modified work provided by a peer adviser. The effect of work modifications alone is unsure. One review states that the workers offered modified work return to work twice as often as others (Krause et al 1998), while a randomised trial from 2006 could not confirm this (Seenstra et al 2006). The "active sick leave" program in Norway that enabled the employees to return to a modified work during their sick leave period could not document any economic benefits from this (Scheel et al. 2002).

The lack of control group of our study in the occupational setting prevents us from any firm conclusions. Nevertheless, these results have been so encouraging that the owner of the project, The Hospital for Rehabilitation, Stavern, has proceeded with further development of this concept.

4.4 Methodological considerations, limitations

This study is a quasi-experimental survey based on questionnaires, telephone interviews and data from the National Insurance Administration and self reports from imaging and surgery departments. There are several limitations in these data collections.

First, it is a general tendency with a decreasing willingness to participate in telephone surveys and answering on questionnaires. Our response rates fell from 55% in the general public in 2002 to 34% in 2005. Similarly in the six co-operating firms, the response rate fell from 61% in 2002 to 45% in 2005, and among the health care providers only 25% answered at both times. This substantial drop in participation and lack of knowledge about the non-responders seems to be an essential limitation of the study. However, there were no differences in response rates between the intervention and control counties, and we did not find any significant demographic differences that could influence on the results. The impact of the decline in response rates is unclear and may not be of such great magnitude as one would believe (Atrostic et al. 2001, Langer 2003).

Also the relationship between attention rate and results seem unclear. The attention rate in our study did not exceed 41% in the general public, while this was 86% in Australia (Buchbinder et al. 2001) and about 60% in Scotland (Waddell et al. 2007). We have explained this with the low scale of our campaign, and linked the lack of changed sickness behaviour to this attention rate. However, among the health professionals, the attention rate was close to 100% without any substantial change in beliefs. The impact of the attention rate seems therefore unclear, but obviously no results can be made without any attention to the messages.

The location of the control county could implicate a bias to the results because of information about the campaign may have been spread also to Telemark situated between the two intervention counties. We have considered this contagiousness to be very limited because the media used in the campaign were very local. We do not believe households in Telemark to read local papers from their neighbouring counties, and the 16 pages pamphlet was only distributed in Aust-Agder and Vestfold.

On the other hand, do we believe that there was a general trend going on in Norway at the time of our campaign, which may have affected also citizens of Telemark as well. This trend was initiated by the foundation of the National Back Pain Network. Particularly among the professionals the launch of the guidelines led to significant debate both in media and in the journals of the professionals associations. Therefore, about 40% of the health care providers in the control county also confirmed knowledge to the campaign, while we believe this merely was knowledge to the general debate going on.

Our data from the National Insurance Administration (NIA) includes only sickness absence of more than three or eight days, related to the employers' agreement with the NIA. While these data are absolute and credible, we miss the short-term sickness absence. However, the short-term absence has been stable for decades and is not regarded to constitute any significant magnitude of the total sickness absence.

The data on surgery rates and number of imaging examinations are somewhat less sure due to the collection of these data directly from the private and official departments in the area. We have no reason to believe that any of the informants manipulated the numbers deliberately, and the method is consistent at all counties at all collection dates.

The lack of controls in the initiative in the six cooperating work places constitutes a limitation of this study. The substantial magnitude of the results compared to the general population indicates though a true effect of the intervention.

5. Conclusions and implications

The conclusions and implications of this study may be summarised as follows:

- There seems to be a correlation between the beliefs held by the general public and their previous experiences of LBP, and with their choice of health care provider.

- The health care providers should be aware that beliefs and attitudes held by the professionals encountering LBP patients are important for the beliefs and prognosis for LBP patients.

- Differences between the groups of health care providers may frustrate patients with LBP, and increased focus on the wordings and how we communicate the prognosis to the patients could reduce this.

- Although mostly in line with guidelines, the professional health providers seemed unaffected by the messages from the campaign. In particular the chiropractors seemed to question whether most LBP recovers spontaneously. Further studies should explore barriers to implement the belief in the good prognosis for acute LBP among all providers.

- A low-budget small-scaled media campaign seemed to improve general beliefs about LBP in the public, but not sufficiently to also alter the sickness behaviour when suffering from LBP.

- The impact of the local media does not appear to be sufficiently strong to obtain attention in the public. This may require national media channels, with a much greater budget for a health related campaign.

The combination of a general media campaign and the same messages delivered at the work place by a fellow peer adviser who also could offer temporarily modifications of work load, seemed to result in substantial improvements in beliefs and sick absence among the employees exposed to the project. This finding could indicate that the occupational setting is a better arena to implement the practical consequences of the modern insight of LBP.

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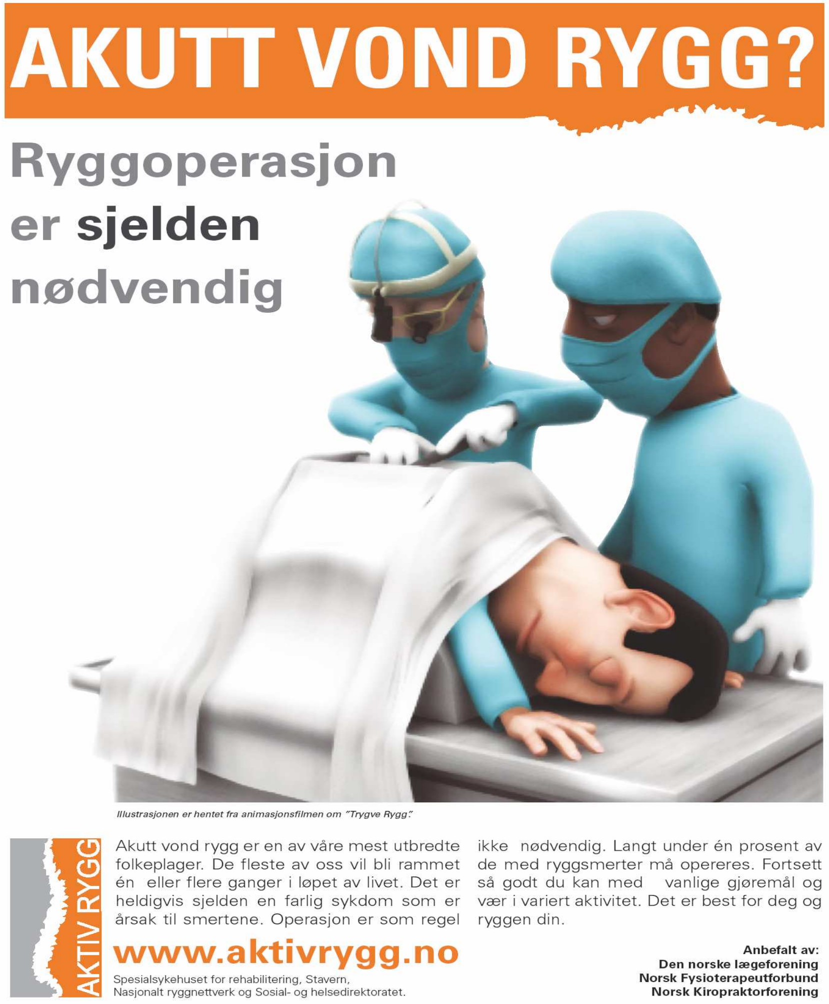
7. Appendices

Appendix 1

Chronological list of interventions in the *“Active Back”* Campaign

Official opening of campaign by the Norwegian Minister of Health		**May 2003**
Website (www.aktivrygg.no)	launched Nov 2002	20 000 visitors throughout the campaign
16 pages pamphlet	#1 May 2003 #2 Nov 2003 #3 May 2005 #4 June 2005	Delivered at all households in both intervention counties
Advertisements	April/May 2003 Nov 2003 March 2004 Dec 2004 May 2005	Local papers, cinemas, radio and TV - in periods of 1-4 weeks duration
Posters and business messages	Spring 2003 Fall 2003 January 2004	Delivered to health care cards with providers, hospitals, pharmacies, workplaces, social security offices
Training of peer advisers	April/May 2002 Nov 2002 May 2003 Sept 2003 Feb 2004	
Meetings, courses	Sept 2002	All providers in Aust-Agder
	Feb 2003	All providers in Vestfold
	Fall 2003	Physiotherapists in both intervention counties
	Fall 2003	Chiropractors in both intervention counties

Appendix 2 - Examples of the posters in the campaign



AKUTT VOND RYGG?

Ryggoperasjon
er **sjelden**
nødvendig

Illustrasjonen er hentet fra animasjonsfilmen om "Trygve Rygg."

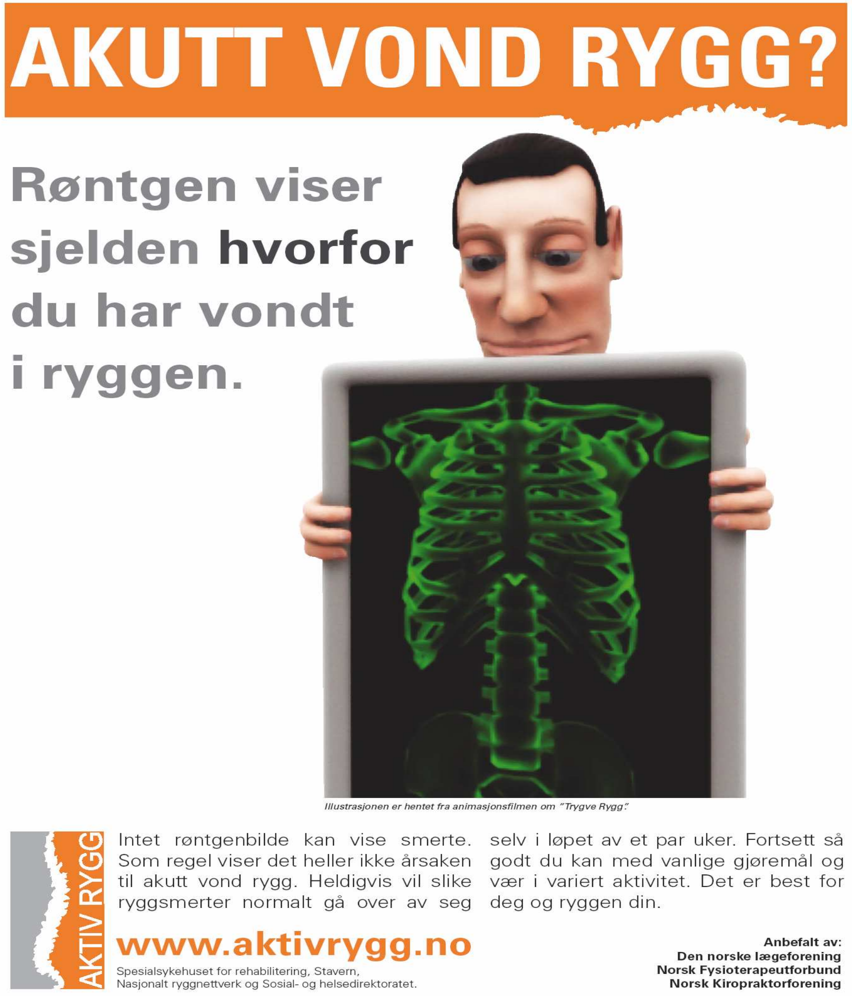
AKTIV RYGG

Akutt vond rygg er en av våre mest utbredte folkeplager. De fleste av oss vil bli rammet én eller flere ganger i løpet av livet. Det er heldigvis sjelden en farlig sykdom som er årsak til smertene. Operasjon er som regel ikke nødvendig. Langt under én prosent av de med ryggsmerter må opereres. Fortsett så godt du kan med vanlige gjøremål og vær i variert aktivitet. Det er best for deg og ryggen din.

www.aktivrygg.no

Spesialsykehuset for rehabilitering, Stavern,
Nasjonalt ryggnettverk og Sosial- og helsedirektoratet.

Anbefalt av:
Den norske lægeforening
Norsk Fysioterapeutforbund
Norsk Kiropraktorforening



AKUTT VOND RYGG?

Røntgen viser
sjelden **hvorfor**
du har vondt
i ryggen.

Illustrasjonen er hentet fra animasjonsfilmen om "Trygve Rygg."

AKTIV RYGG

Intet røntgenbilde kan vise smerte. Som regel viser det heller ikke årsaken til akutt vond rygg. Heldigvis vil slike ryggsmerter normalt gå over av seg selv i løpet av et par uker. Fortsett så godt du kan med vanlige gjøremål og vær i variert aktivitet. Det er best for deg og ryggen din.

www.aktivrygg.no

Spesialsykehuset for rehabilitering, Stavern,
Nasjonalt ryggnettverk og Sosial- og helsedirektoratet.

Anbefalt av:
Den norske lægeforening
Norsk Fysioterapeutforbund
Norsk Kiropraktorforening

Appendix 3 - Questionnaires

1. Questionnaire for telephone survey (interview) and employees (written)

Background

Gender: Male Female

Age:

Social state: Married Co-habitee Divorced Single

Education: Primary school Skilled education University

Leader duties at work: Yes No

Ages at present work:

Physical loading at work: Light Moderate Heavy

Shift work: Yes No

Personal experiences with back pain

Have you ever had back pain yourself? Yes No

If yes: did you have pain
- previously but not the last 12 months
- during the last 12 months but not the last 2 weeks
- during the last 2 weeks but not at present
- in pain at present

Last time you had LBP, how would characterize the pain?
- very light pain
- light pain
- moderate pain
- strong pain
- very strong pain

Which of these activities did you do at your last episode of LBP:

- nothing, pain recovered by it self
- sought a doctor
- sought a chiropractor
- sought a physiotherapist
- sought other health care provider
- kept calm
- changed or increased exercises
- continued every daily activities like normal
- reduced on leisure activities
- was sick listed (for how long?)
- not sick listed, but modifications at work
- used medications
- other:

<u>Beliefs about LBP</u>

What is your opinion about the following statements?

(5 points Likert scale: totally disagree, disagree, agree/disagree, agree, totally agree)

- back pain recovers best by itself
- disc herniation requires surgery
- modern X-rays will usually find the cause of the back pain
- LBP requires rest and tranquillity until recovery
- in most cases back pain recovers by itself within some weeks
- back pain is usually caused by injury or heavy lifting
- everyone with back pain should have an spine X-ray

- back pain is usually disabling
- bed rest is the mainstay of therapy
- no other medical condition is more costly to the society
- one recovers faster if one continues at work or returns as soon as possible
- my opinions about best managing back pain have changed the last year

-

Personal way of life

Do you smoke? Yes No

How often do you exercise?

- never
- once a week or more rarely
- 1-2 times per week
- 3-4 times per week
- 5 times per week or more

2. Questionnaire for telephone survey (interview) and employees (written)

Background

Profession: Doctor Physiotherapist Chiropractor

Speciality:

County: Vestfold Aust-Agder Telemark

Gender: Male Female

Age:

Graduate year:

University of education:

No of colleagues at same clinic:

For doctors: Number of people listed

Average number of consultations/treatments per week:

Average number of LBP related consultations/treatments per week:

Your personal routines with LBP patients

How often do you perform a physical examination when a LBP patient comes to visit you?

always most often sometimes rarely

What is to you the major gain of a physical examination?

to make a diagnosis

to exclude possible severe conditions requiring immediate intervention

to satisfy the patients’ expectations

to make decisions for choice of treatment

The Norwegian Back Pain Network launched national guidelines in 2002; how well do you know these guidelines?

- never heard of them
- have registered the guidelines but are not familiar with the content
- have registered the guidelines but without any impact on my practice
- familiar with guidelines but without any impact on my practice
- well familiar with guidelines and consider them to have influenced on my practice

Considering all groups of patients that you are treating; how do you range your interest for LBP and LBP patients?

- considerably interest in this subject
- interest in the subject in line with 3 or 4 other subjects
- interest in the subject in line with most other subjects
- less interested
- absolutely not interested, would rather not have LBP patients

Please make a note on how often you consider these interventions to be necessary (and refer to) at different LBP patients:

(4 points Likert scale: always, often, sometimes, almost never)

Non-specific LBP (without radiation)

- X-ray
- CT scan
- MRI
- Laboratory tests
- New session for control
- Referral to a doctor
- Referral to a physiotherapist
- Referral to a chiropractor
- Referral to other health care provider

Sciatica (radiating pain, possible nerve root affection)

- X-ray
- CT scan
- MRI
- Laboratory tests
- New session for control
- Referral to a doctor
- Referral to a physiotherapist
- Referral to a chiropractor
- Referral to other health care provider

How often do you give the following referrals or advices to your LBP patients:

(4 points Likert scale: always, often, sometimes, almost never)

Non-specific LBP (without radiation)

- exercises
- physiotherapy
- injections
- traction
- manipulation
- back support
- hospitalisation
- NSAID’s
- Steroids (orally)
- Muscle relaxant
- Paracetamol

Sciatica (radiating pain, possible nerve root affection)

- exercises
- physiotherapy
- injections
- traction
- manipulation
- back support
- hospitalisation
- NSAID's
- Steroids (orally)
- Muscle relaxant
- Paracetamol

What is your opinion about the following statements?

(5 points Likert scale: totally disagree, disagree, agree/disagree, agree, totally agree)

- back pain recovers best by itself
- disc herniation should most often have surgery
- radiograph and newer imaging tests are useful to identify the cause of the pain
- LBP patients should rest until the pain recovers
- in most cases, back pain recovers by itself in a couple of weeks, no matter what we do
- back pain is usually caused by injuries or heavy lifting
- back pain is usually disabling
- LBP patients should have bed rest until the pain is substantially less
- LBP patients should listen to their body and try to avoid anything that provokes pain
- most often, it will be possible to find an exact cause of the pain
- the treatment is individual following the patho-anatomic cause of the pain

- one recovers faster from back pain if one continues at work or returns as soon as possible
- any treatment at a doctor, physiotherapist or chiropractor is symptomatic pain relieving
- my opinions about best LBP management have changed the last 12 months

SSR and the National Back Pain Network have during 2002 – 2005 accomplished a campaign, *"Active Back"*, towards the general public and the health care –

Have you noticed this campaign? Yes No

If you did notice this campaign, did you find it useful for your professional work as a doctor / physiotherapist / chiropractor ?

- the messages in the campaign have made it easier to communicate appropriate attitudes to the patients
- the campaign has made it easier to cooperate with other health care providers
- the campaign has increased my own knowledge about back pain
- the campaign has increased my interest for the LBP patients
- the campaign has not influenced my attitudes or practice in any particular way
- other: