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Vorstand: Professor Dr. med. Gerold Stucki

Validation of the Comprehensive ICF Core Set for Low Back Pain: The Perspective of Physicians

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1. Deutsche Zusammenfassung

Hintergrund: Das “Umfassende ICF Core Set für lumbalen Rückenschmerz (LBP)“ dient der klinischen Anwendung der Internationalen Klassifikation der Funktionsfähigkeit, Behinderung und Gesundheit (ICF) und repräsentiert das prototypische Spektrum von Funktionsfähigkeit bei Patienten mit lumbalem Rückenschmerz.

Ziel: Das Ziel dieser Studie war, das „Umfassende ICF Core Set für lumbalen Rückenschmerz“ aus der Perspektive der Ärzte zu validieren.

Methoden: In der Behandlung von Patienten mit lumbalem Rückenschmerz erfahrene Ärzte wurden nach den Problemen, Ressourcen und Umweltfaktoren gefragt, die für die ärztliche Behandlung eine Rolle spielen. Dabei wurde die so genannte Delphi-Methode angewandt. Die Expertenbefragung erfolgte in drei Runden per elektronischer Postzustellung (E-Mail). Die Antworten wurden nach definierten Übersetzungsregeln in die Sprache der ICF übersetzt.

Ergebnisse: 71 Ärzte aus 36 Ländern nannten 707 Konzepte, die alle Komponenten der ICF abdeckten. Diese Antworten wurden in 193 ICF Kategorien übersetzt. Drei ICF Kategorien, namentlich *b530 Funktionen der Aufrechterhaltung des Körpergewichts*, *b6202 Harnkontinenz* und *b6700 Mit dem Geschlechtsverkehr verbundene Beschwerden* sind nicht im „Umfassenden ICF Core Set für lumbalen Rückenschmerz“ enthalten, obwohl wenigstens 75% der Teilnehmer sie als wichtig eingestuft haben. 27 Konzepte wurden der noch nicht entwickelten ICF Komponente *Personenbezogene Faktoren* zugeordnet, 21 Konzepte sind von der ICF nicht abgedeckt.

Konklusion: Die Validität des „Umfassenden ICF Core Sets für lumbalen Rückenschmerz“ wurde von den teilnehmenden Ärzten weitgehend bestätigt. Allerdings zeigten sich einige Ergebnisse, die der weiteren Untersuchung bedürfen.

2. Abstract

Objective: The “Comprehensive ICF Core Set for Low Back Pain (LBP)“ is an application of the International Classification of Functioning, Disability and Health (ICF) and represents the typical spectrum of problems in functioning of patients with LBP. The objective of this study was to validate this ICF Core Set from the perspective of physicians.

Methods: Physicians experienced in the treatment of LBP were asked about the patients’ problems, patients’ resources and aspects of environment that physicians take care of. The survey was conducted in three rounds using the Delphi technique. Responses were linked to the ICF.

Results: 71 physicians in 36 countries named 707 concepts that covered all ICF components. 193 ICF categories were linked to these answers. 3 ICF categories, namely *b530 Weight maintenance functions, b6202 Urinary continence* and *b6700 Discomfort associated with sexual intercourse* were not represented in the Comprehensive ICF Core Set for LBP, although at least 75% of the participants had rated them as important. 27 concepts were linked to the ICF component Personal factors, which has not yet been developed and 21 issues were not covered by the ICF.

Conclusion: The validity of the Comprehensive ICF Core Set for LBP was largely supported by the physicians. However, some issues were raised that have not been covered yet and need to be investigated further.

3. Introduction

3.1. Epidemiology

Low back pain is a notoriously challenging problem that can have a major impact on people's lives (Corbett, et al. 2007). The incidence and prevalence of LBP are roughly the same the world over, men and women are equally affected. It is reported by about 80% of the population at some time in their lives (World Health Organization, 2003; Andersson, 1997; Deyo, 2001; Frymoyer, 1988). Back pain of at least moderate intensity and duration has an annual incidence in the adult population of 10–15% (Andersson, 1999). The annual prevalence of back pain ranges from 15% to 45%, with point prevalences averaging 30% (Andersson, 1997). The prevalence rises with increasing age up to 65 years. Generally 90% or more of the patients recover over 3 months. Unfortunately, for those individuals who do not recover within this time the recovery process is slow and their demand on the health-care system is large and costly. Seventy-five percent of people with LBP are between 30 and 59 years of age, i.e. in their most productive years. It is the most common and most expensive cause of work-related disability, in terms of workers' compensation and medical expenses (Andersson, 1999; Ehrlich et Khaltaev, 1999).

3.2. Clinical Features

Low back pain (LBP) is neither a fixed disease nor a diagnostic entity of any sort. The term refers to pain of variable duration in an area of the anatomy

afflicted so often that it has become a paradigm of responses to external and internal stimuli (Ehrlich, 2003). It is a chronic problem with an untidy pattern of grumbling symptoms and periods of relative freedom from pain and disability interspersed with acute episodes, exacerbations, and recurrences (Croft et al., 1998).

The pertinent physical findings usually associated with disability include restricted spinal range of motion, straight leg raising impairments, absence of neurological findings, reduced trunk strength and lifting capacity (Frymoyer et al., 1987; Rainville et Sobel, 1997).

The symptoms of LBP and the associated disability bear only a poor relationship to objective data (Ehrlich et Khaltaev, 1999), they may need to be considered rather as a reflection of the psychophysical performance than of the true physiological abilities (Rainville et Sobel, 1997). Specific causes such as malignancies, spondylarthropathies, infections, vertebral fractures or disc herniations, account for less than 20% of cases of back pain (Bigos et al., 1994; Ehrlich, 2003). Searching for the structure at fault can prolong the expectation of finding a cure and can cause lengthy delays for investigations, the results of which often do not provide clear directions for treatment (Corbett et al., 2007; Foster et al., 2003).

That implies that there are additional factors responsible for the genesis of LBP, e.g. psychological factors, educational status and work satisfaction (Frymoyer et al., 1987; Schultz et al., 2002; Hadler, 1999). It appears that persisting symptoms in low back trouble may be due more to psychosocial influences than to medical factors (Burton et al., 1995). Various cross-sectional studies indicate an association between psychological factors and the

occurrence of LBP (Andersson, 1997). Especially depressive mood and somatization have been found to play a crucial role in the transition from acute episode to chronic LBP (Westbrook et al., 2002; Pincus et al., 2002). Even though many researchers have concluded that multi-causal and biopsychosocial models are necessary to understand the experiences of people living with LBP, a largely pathoanatomical paradigm of LBP has persisted in the medical treatment offered to patients (Corbett et al., 2007).

Treatment for chronic back pain remains notoriously difficult, and no single panacea has emerged. People with LBP often turn to medical consultations and drug therapies, but they also use a variety of alternative approaches (Ehrlich et Khaltaev, 1999). Unnecessary and unproven treatment may prolong disability and be more expensive (Spitzer et al., 1987), so the question of which therapy to apply to the individual patient has to be evaluated carefully.

There is contradictory evidence that the commonly prescribed non-steroidal antiinflammatory drugs (NSAIDs) are effective for chronic LBP in the short to intermediate term, and moderate evidence that various types of NSAIDs are equally effective or ineffective for chronic LBP (Moulin, 2001). Recent guidelines for treating low back pain, issued by numerous professional medical societies, recommend NSAIDs and COX-2 inhibitors only in strictly defined circumstances, at the lowest effective dose and for the shortest possible period of time (Schug, 2007).

Of the oral opioids, tramadol has to be favoured due to its multi-modal effect, resulting from opioid and monoaminergic mechanisms, thereby potentially efficient in nociceptive and neuropathic pain, with fewer instances of side effects

(Schug, 2007). There is inadequate evidence that controlled- and intermediate-release tramadol provides equal analgesic effect for chronic LBP (Moulin, 2001).

Muscle relaxants showed limited effectiveness for up to four weeks (Moulin, 2001).

Anti-depressant drugs, particularly tricyclic anti-depressants and serotonin and noradrenalin reuptake inhibitors, have analgesic effects in chronic rheumatic painful states, such as chronic low back pain, in which analgesics and NSAIDs are not very efficient, (Perrot et al., 2008). A number of systematic reviews come to the conclusion that there is moderate evidence that antidepressants are not effective for chronic LBP (Moulin, 2001; Turner et Denny, 1993; van Tulder et al., 1997), though a weak analgesic effect has been observed recently, with an efficacy level close to that of analgesics (Perrot et al., 2008).

In general, medication for symptomatic relief should be prescribed on a regular schedule rather than on an as-needed basis (Fordyce et al., 1986). Nevertheless, treatments aimed at symptom reduction often have been exhaustively attempted with only temporary or marginal effectiveness and with few, if any options available (Rainville et Sobel, 1997).

Spinal manipulation and physical therapy are alternative treatments for symptomatic relief among patients with acute or subacute low back pain, but again their effects are limited (Cherkin et al., 1998; Andersson et al., 1999). However, physical therapy, generally consisting of stretching, strengthening and aerobic exercise, is widely used and was found to improve both pain and physical function in those with LBP persisting beyond six weeks (Foye et al., 2007).

Interventional pain therapies like epidural injection of steroids, facet blocks, radiofrequency treatment, spinal cord stimulation, intradiscal electrothermal therapy and intrathecal drug delivery can be highly effective, but they are unlikely to be helpful and may even cause harm when used haphazardly (Rathmell, 2008). Multiple surgical procedures are rarely helpful (Deyo et Weinstein 2001). Retrospective reviews have established that a disproportionate number of patients entering pain clinics and rehabilitation programs have had unsuccessful previous operations (Frymoyer, 1992). Many studies have shown that the chronically disabled low back population includes a disproportionate number of people with failed surgical procedures, some of frequent occurrence because the original indication for surgical intervention was unclear due to a questionable or nonverifiable diagnosis (Frymoyer et Cats-Baril, 1987).

Even when patients are selected for surgery based on objective findings, one of the most potent predictors of failure is the claim for worker's compensation (Hanley et Levy, 1989; Kahanovitz, 1991). Among the many factors that may influence this process is the overall negative reaction many physicians have toward caring for patients who have ongoing litigation (Frymoyer et Cats-Baril, 1987). If a patient is disabled for more than six months, probability of return to work is *50%,* by one year it falls to 20%, and at two years the chances are minimal unless aggressive rehabilitation is undertaken (Frymoyer, 1992).

Considering all these issues about LBP, foremost the difficulties in treatment, a multidisciplinary approach seems to be a useful way to go. Besides physicians of various fields offering differing medical care, psychologists,

physical and occupational therapists are involved in treatment and rehabilitation (Deyo, 2001; Fordyce et al., 1986, Cherkin et al., 1998; Andersson, Lucente et al, 1999). All of them should understand pain-related illness behaviours and the impact of psychosocial factors on reported pain and disability. With an understanding of these issues, and by employing appropriate behavioural techniques to alter fear behaviours, successful rehabilitation can be accomplished in the majority of cases (Rainville et Sobel, 1997; Fordyce et al., 1982).

Multidisciplinary pain treatment programs are an important option for patients with chronic LBP whose function is significantly impaired. A typical multidisciplinary treatment programme includes a medical manager, usually a physician, overseeing all aspects of care and working with other health care professionals (Rathmell, 2008). Multidisciplinary pain centres typically combine cognitive–behavioural therapy, patient education, supervised exercise, selective nerve blocks, and other strategies to restore functioning. However, complete relief of symptoms may still be unrealistic and therapeutic goals may need to be refocused on optimizing daily function (Deyo et Weinstein, 2001).

The outcome perceived by the patient is less influenced by the pain he experiences than by the disability that results from the pain (Roland et Morris, 1983). Back pain prevents affected individuals, their families and mates from engaging in desired activities (Patrick, Deyo et al., 1995). But it is also said that chronic restriction of function is improved by continuing daily and social activities within the limits permitted by the pain, and that patients also can return to work faster and have fewer recurrent problems as a result (Malmivaara et al., 1995; Waddell et al., 1997), thus making an escape from the vicious circle possible.

3.3. International Classification of Functioning, Disability and Health (ICF)

To optimise interventions aimed at maintaining functioning and minimising disability, a proper and comprehensive understanding of the patients' functioning and health status is needed. The International Classification of Functioning, Disability and Health (ICF) provides a unified language for the description of health conditions in rehabilitation and therefore a common framework for all health professions to achieve this understanding (World Health Organization, 2001). Since its approval by the World Health Assembly in May 2001 all member states of the World Health Organization (WHO) are urged to implement it in clinical practice.

The ICF is based on an integrative and functional model of health that provides a holistic, multidimensional and interdisciplinary understanding of health and health-related conditions. According to the ICF the problems associated with a disease may concern *body functions, body structures* and the *activities and participation* in life situations. Health states and the development of disabilities are modified by the contextual factors such as *environmental* and *personal factors* (World Health Organization, 2001) (figure 1).

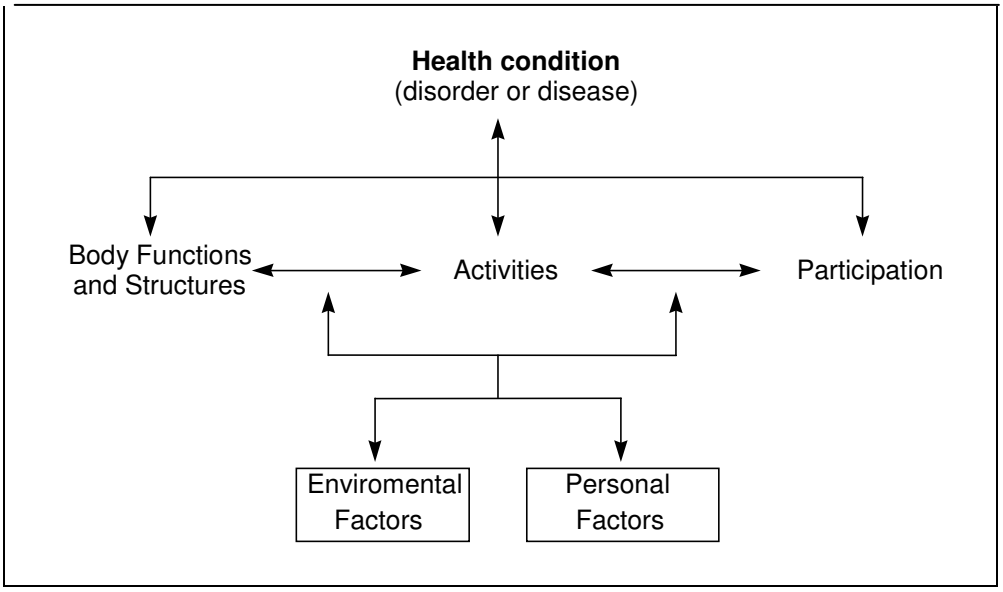

Figure 1: ICF model of functioning and disability

The ICF consists of two parts – (a) Functioning and Disability and (b) Contextual Factors – each of which has two components (see figure 2). Within Functioning and Disability the body part consists of two domains, *body functions* and *body structures*. Chapters within these two domains are organized according to body systems. The component *activities and participation* covers domains of functioning from both an individual and societal perspective. In contrast to other disability models, the ICF classifies contextual factors that may either facilitate or hinder functioning and therefore influence potential disability. These contextual factors consist of two components. The first is *environmental factors* that include factors in the physical, social or attitudinal world. The second component is *personal factors* that includes gender, age, habits, coping style, etc., but it is as yet not classified.

All items in the classification are arranged hierarchically (see figure 2). Categories are divided into chapters, which constitute the first level of precision. Categories on higher levels are more detailed. That implies that a more detailed

higher-levelled category covers all the aspects applicable for the lower-levelled category of which it is a member, but not vice versa. The magnitude of the level of health (e.g. the severity of the problem) is denoted for each category by a qualifier according to a five level scale ranging from “no problem” to “severe problem”.

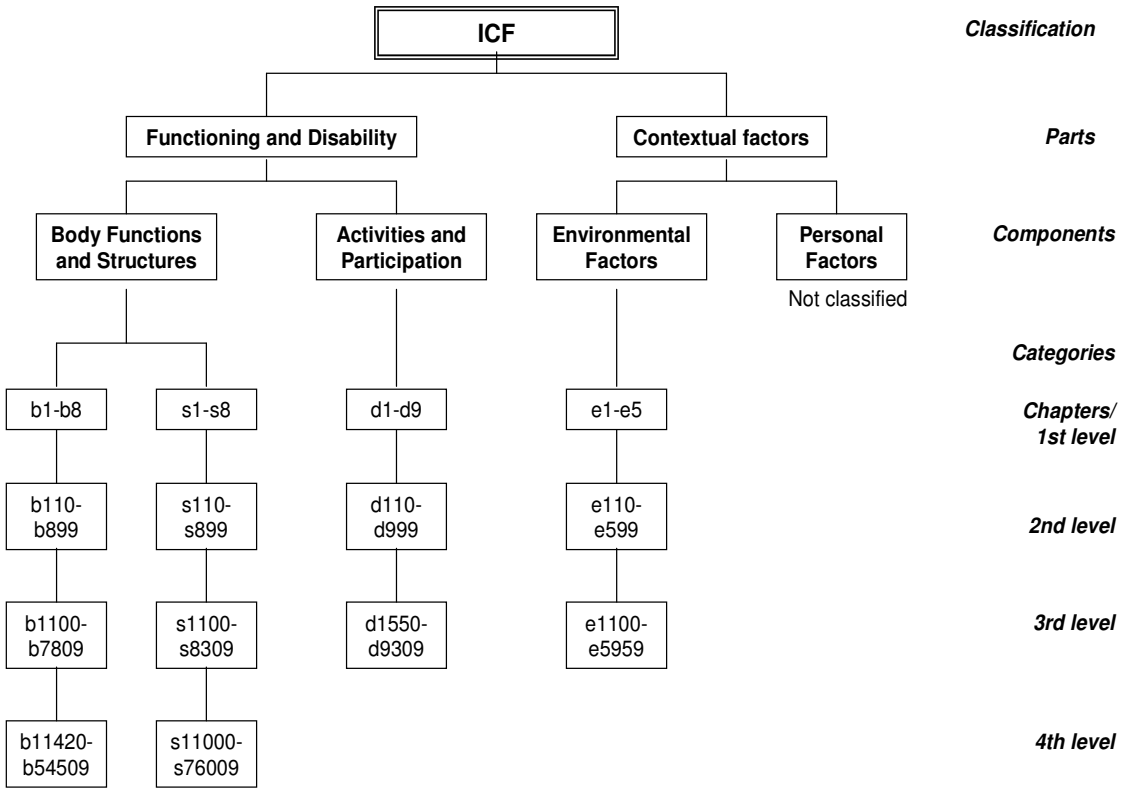

Figure 2: Structure of the International Classification of Functioning, Disability and Health; hierarchical arrangement.

Both the content and the structure of the ICF indicate its potential value for all health professions involved in LPB care (Weigl et al., 2006). However, since the ICF as a whole is composed of more than 1400 categories, it is not feasible for use in clinical routine. To facilitate the implementation of the

ICF in clinical practice, ICF Core Sets for a number of health conditions, including LBP (Cieza, Stucki et al., 2004), have been developed in collaboration between the ICF Research Branch of WHO FIC CC (DIMDI) at the Department of Physical Medicine and Rehabilitation of the Ludwig-Maximilian-University in Munich (http:\\www.ICF-Research-Branch.org) and the WHO (Stucki et Grimby, 2004; Cieza et al., 2004).

The development of the condition-specific ICF Core Sets followed a standard approach that includes a formal decision-making and consensus process; evidence gathered from preliminary studies, including a Delphi exercise, a systematic review and empiric data collection were integrated (Cieza, Ewert et al., 2004; Brockow et al., 2004; Ewert et al., 2004; Weigl et al., 2004). In the Delphi exercise 42 categories representing the most typical problems of patients suffering from LBP were identified by 37 experts worldwide (30 physicians and 7 occupational and physical therapists) (Weigl et al., 2004). In a systematic review, the concepts contained in outcome measures of 129 clinical trials on LBP were selected and 7008 of them could be linked to the ICF (Brockow et al., 2004). Additionally, in a multi-centre, cross-sectional study, data of 163 patients with LBP were collected using the ICF checklist, in order to identify the ICF categories most frequently used to describe the functional problems of patients with LBP (Ewert et al., 2004).

The results of these preliminary studies were the subject of a consensus conference, where the 78 ICF categories now included in the Comprehensive ICF Core Set were identified in a formal decision-making and consensus process by 18 experts (14 physicians with various sub-

specializations, three occupational therapists and one physical therapist) from 15 different countries (Stucki et Grimby, 2004).

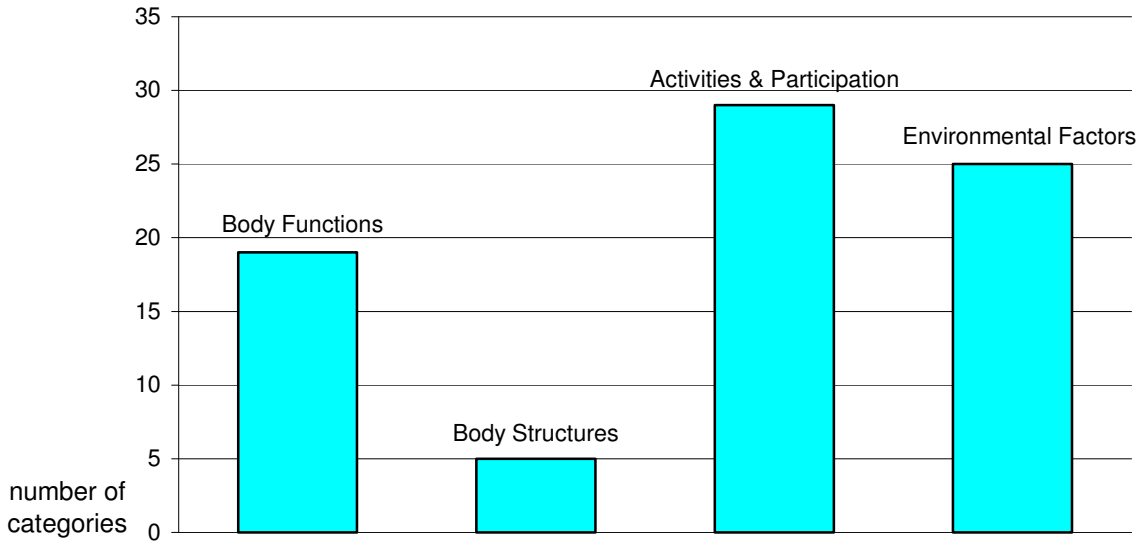

Figure 3: Number of categories included in the Comprehensive ICF Core Set for LBP, subdivision of the separate components

The 78 ICF categories included in the Comprehensive ICF Core Set for LBP (see figure 3 and 9.1.) cover not only aspects directly related to pain but also a wide spectrum of patients' problems in functioning in daily life (Cieza, Stucki et al., 2004). Based on the Comprehensive ICF Core Set for LBP the impairments, limitations in activities, restrictions in participation and the influential environmental factors of a determined patient can be described and a functioning profile created serving as a reference for follow-up. Since the treatment of health conditions like LBP requires coordinated longitudinal care, a problem-solving approach that can structure the management of patients among the different health professionals involved is needed (Steiner et al., 2002; Cieza et Stucki, 2006). The Comprehensive ICF Core Set for LBP provides a very useful starting point in such a process.

3.4. Objective

The Comprehensive ICF Core Set for LBP is undergoing woldwide testing and validation using a number of approaches. So far studies have tested the feasibility (Stucki et Grimby, 2004) as well as the content validity of the Comprehensive ICF Core Set for LBP from the patients' perspective (Mullis et al., 2007). One key aspect is the validation from the user perspective for which the Comprehensive Core Sets have been developed in the first place. As physicians obviously play a major role in the care of patients with LBP, it seems most important to evaluate whether their perspective is sufficiently represented in the Comprehensive ICF Core Set for LBP. Furthermore, the preliminary studies and consensus process did not explicitly address the interventions applied by health professionals. Since ICF Core Sets should serve as a standard for interprofessional assessment and assessment in clinical trials, it is most important whether the categories included in the Comprehensive ICF Core Set cover the patients' problems addressed by the specific interventions of health professionals. Moreover, the validation from the perspective of health professionals will contribute to the worldwide acceptance and credibility of the Comprehensive ICF Core Set for LBP.

Consequently the objective of this study was to validate the Comprehensive ICF Core Set for LBP from the perspective of physicians. The specific aims were firstly intended to identify the patients' problems, resources and aspects of environment treated by physicians, and secondly to analyse

whether these issues are represented by the current Comprehensive ICF Core Set for LBP.

4. Materials and Methods

4.1. Delphi Method

We conducted a three-round electronic-mail survey of physicians using the Delphi technique (Duffield, 1993; Goodman, 1987; Linstone et Turoff, 1975). The Delphi technique aims to gain consensus from a panel of individuals who have knowledge of the topic being investigated (McKenna, 1994). These well-informed persons are commonly titled 'experts'. The inclusion of experts in a specific field is based on the assumption that experts have an advantage in information and knowledge about the topic under discussion. This maximizes the number and range of ideas and opinions gathered while minimizing the number of persons needed to ask. The written form of the Delphi survey makes it possible to conduct the process via electronic mail. This facilitates the collection of opinions of experts worldwide in a time and cost-effective way (Hasson et al., 2000). The Delphi method is a multi-stage process where each stage builds on the results of the previous one and a series of rounds is used to both gather and provide information about a particular subject. The technique is characterized first by its anonymity, thus avoiding group dominance; second by iteration which allows panel members to change their opinions in subsequent rounds; and third

by controlled feedback showing the distribution of the group's response as well as the previous individual response (Jones et Hunter, 1995).

4.2. Recruitment of Participants

In the preparatory phase of the study, associations of physicians as well as universities, hospitals and former cooperation partners of the ICF research branch in Munich were contacted. In addition, literature research and personal recommendations were used to identify experts.

Since there is no database available that represents the international target population of physicians experienced in the treatment of patients with LBP, random sampling was not possible. The sample was selected using a purposive sampling approach. Purposive sampling is based on the assumptions that a researcher's knowledge about the population can be used to handpick the cases to be included in the sample (Polit et Hungler, 1997).

To assure that the participants of the study are 'informed individuals' concerning LBP treatment, the initial letter notes that participants should be "physicians experienced in the treatment of LBP".

The first contact included an invitation to co-operate and a detailed description of the project targets, the Delphi process and the timeline. Only persons who agreed to participate were included into the expert sample and received the questionnaire of the first Delphi round.

4.3. Delphi Process

The process and verbatim questions of the electronic-mail survey using the Delphi technique are displayed in Figure 4. The participants had 3 weeks to mail their responses for each round. Reminders were sent approximately one week and 2 days before deadline.

In Round 1 of the Delphi exercise an informational letter including instructions and an Excel file containing an open-ended questionnaire were sent to all experts. In the questionnaire the participants were requested to list all the patients' problems, patients' resources and aspects of environment treated by physicians in patients with LBP. Additionally, the participants were asked to complete questions on demographic characteristics and professional experience. Responses were collected and linked to the ICF.

In the second Delphi round, the participants received a list of the ICF categories linked to the responses of the first round. The categories were ordered according the structure of the ICF. The responses that could not be linked to an existing ICF category were categorized by the research team and listed. The participants were requested to agree or disagree whether the respective ICF category represents patients' problems, patients' resources or aspects of environment treated by physicians in patients with LBP.

In the third Delphi round the participants received a list of the ICF categories including the proportion and the identification numbers of the participants who did agree that the categories represent patients' problems, patients' resources or aspects of environment treated by physicians in patients

with LBP. The participants were requested to answer the same question taking into account the responses of the group as well as their previous response.

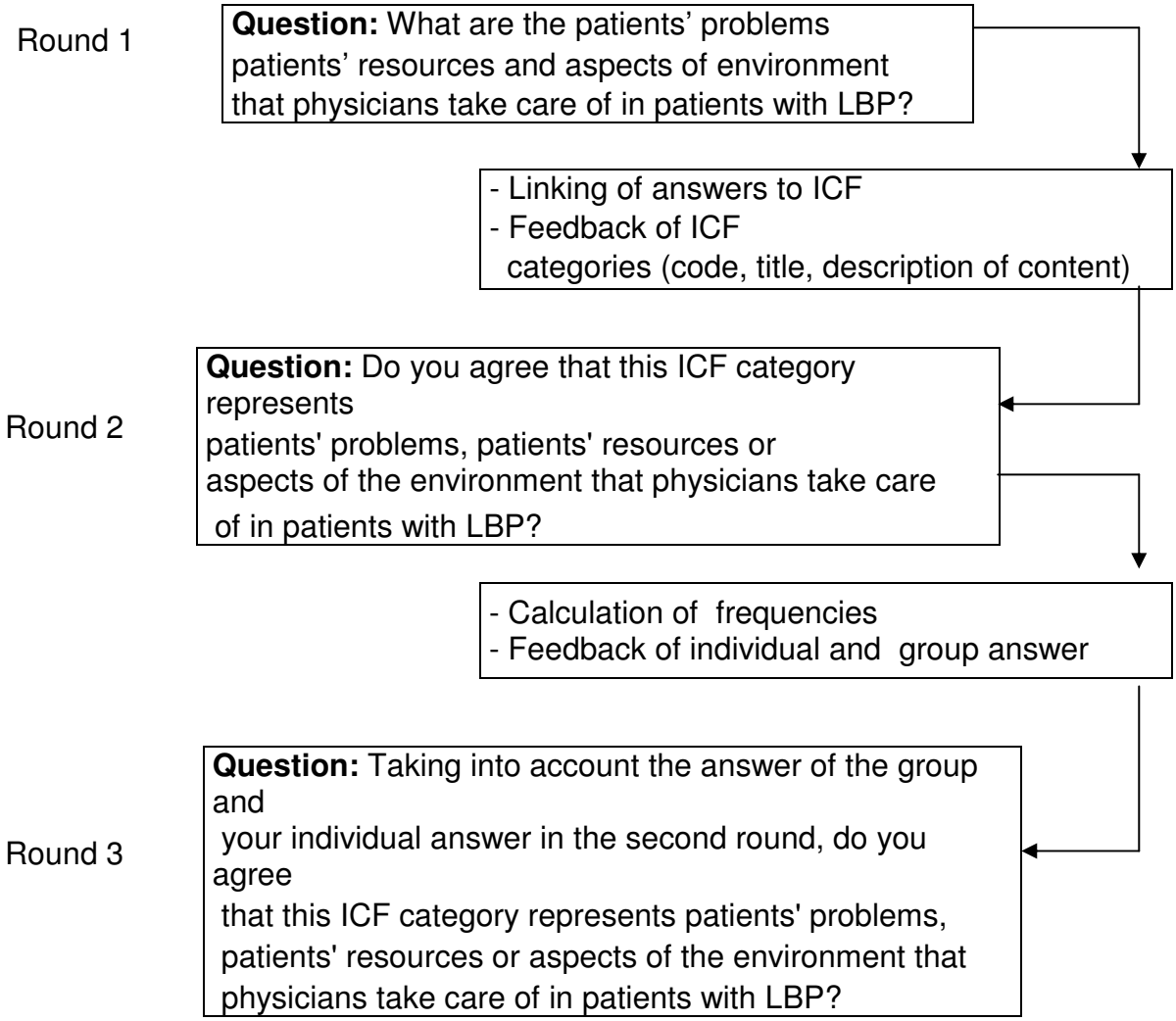

Figure 4: Description of the Delphi Exercise

4.4. Linking

An ICF category is coded by the component letter and a suffix of one to five digits. The letters b, s, d and e refer to the components *Body functions* (b), *Body structures* (s), A*ctivities and Participation* (d) and *Environmental factors* (e) (see Figure 1). This letter is followed by a one digit number indicating the

chapter, the code for the second level (two digits) and the third and fourth levels (one digit each). The component letter with the suffixes of 1, 3, 4, or five digits corresponds with the code of the so-called categories. Categories are the units of the ICF classification. Within each chapter, there are individual 2-, 3-, or 4-level categories. An example from the component Body Functions is presented below:

b2 Sensory functions and pain (first/ chapter level)

b280 Sensation of pain (second level)

b2801 Pain in body part (third level)

b28013 Pain in back (fourth level).

Within each component, the categories are arranged in a stem/branch/leaf scheme. Consequently a higher-level (more detailed) category shares the lower-level categories of which it is the member, so the use of a higher-level category implies that the lower-level category is applicable, but not vice versa.

Each response of the first Delphi round was linked to the most precise ICF category. The linking procedure is a four-step process that is shown in figure 5.

The linkage was performed by a trained doctoral student on the basis of the ten linking rules established in former studies (Cieza et al., 2002; Cieza et al., 2005). If a response contained more than one concept, several ICF categories could be linked. 50 % of the responses were linked separately by two health professionals. Consensus between the health professionals was used to decide which ICF category should be linked to each response. In case of disagreement between the two health professionals, the suggested categories

were discussed by a team consisting of three health professionals. Based on this discussion a joint decision was made (table 1).

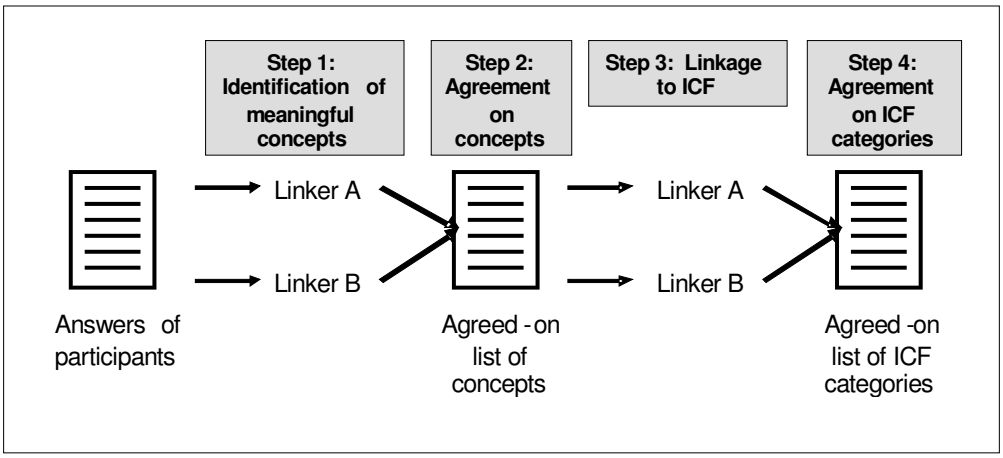

Figure 5: Linking procedure in a four-step process

Table 1: Example of the four linking steps

	Step 1		**Step 2**	**Step 3**		**Step 4**
Answer of participant	**Identified concept linker A**	**Identified concept linker B**	**Agreed on Concept**	**Linked ICF category linker A**	**Linked ICF category linker B**	**Agreed on ICF category**
weakness of lower limbs	weakness	weakness of lower limbs	weakness of lower limbs	**b 7303**	**b 730**	**b7303**
	lower limbs			**s 12002**	**s 750**	
depression and frustration	depression	depression	depression	**hc**	**hc**	**hc**
	frustration	frustration	frustration	**b152**	**b152**	**b152**

4.5 Statistical Methods

Statistical analysis was performed using SAS for Windows V8. Descriptive statistics were used to characterise the sample and frequencies of responses. The level of significance was set to 0.05. Kappa statistics with bootstrapped confidence intervals were used to describe the agreement between the two health professionals who performed the linking (Cohen, 1960; Vierkant, 2007).

5. Results

5.1. Recruitment and participants

One-hundred-sixty associations of various fields (e.g. physical medicine and rehabilitation, pain medicine, rheumatology, orthopaedics, neurosurgery) from all over the world were contacted, 18 associations forwarded our email to their members or named experts, who were then contacted directly. Two associations posted our mail on their webpage or sent the invitation out in their newsletter. Twenty-five experts agreed to participate.

Of 30 universities that were contacted one expert followed our invitation. Emails were also sent to 180 hospitals, where 15 experts agreed to participate. Sixty-five experts were found by internet and literature research, nine were willing to collaborate. One-hundred-twenty-eight cooperation partners of the ICF

research branch were contacted, 19 agreed to participate as did 15 further experts recommended by cooperation partners.

Seventy-one of 83 physicians (85.5%) who had agreed to participate in the study, filled in the First Round questionnaire. The experts' demographic and professional characteristics are shown in Table 2. No significant changes of demographic sample characteristics due to attrition of participants between the three Delphi rounds could be found (figure 6).

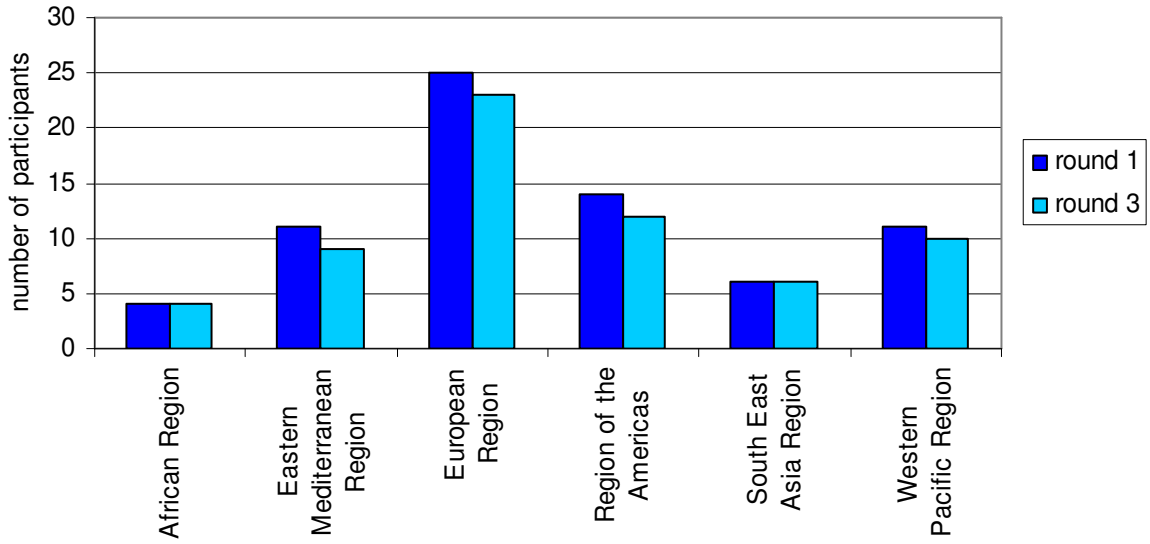

Table 2: Attrition of participants between the Delphi rounds, demographics and professional experience of the participants in round 1

WHO Region	**Round1** (n)	**Round2** (n)	**Round3** (n)	**Female** (%)	**Age** Median (Min-Max)	**Professional experience** [years] Median (Min-Max)	**LBP Experience** [years] Median (Min-Max)	**Self-rating Expertise LBP #** Median (Min-Max)	**Mainly treating patients in acute situations** (n)	**Mainly treating patients in early-postacute situations** (n)	**Mainly treating patients in chronic situations** (n)
African Region[1]	4	4	4	0.0%	43.75 (37-53)	13.25 (8-20)	11.5 (9-15)	3.75 (3-4)	2	2	4
Eastern Mediterranean Region[2]	11	10	9	20.0%	47.9 * (31-68)	19.2 (2-38)	18.6 (3-41)	4.05 (3-5)	5	8	10
European Region[3]	25	24	23	48.0%	48.0 * (30-71)	21.1 (2-46)	17.8 (6-46)	4.5 (4-5)	11	18	23
Region of the Americas[4]	14	13	12	35.7%	49.9 (32-71)	22.8 (9-40)	21.4 (6-40)	4.2 (3-5)	6	11	14
South East Asia Region[5]	6	6	6	0.0%	49.7 (41-60)	21.9 (10-35)	17.5 (7-30)	4.0 (3-5)	5	5	6
Western Pacific Region[6]	11	10	10	45.5%	48.2 (35-58)	21.6 (13-33)	22.2 (13-33)	4.5 (4-5)	5	6	10
Total	**71**	**67**	**64**	**33.8%**	**48.4 ** (30-71)**	**20.8 (2-46)**	**18.9 (3-46)**	**4.2 (3-5)**	**34**	**50**	**67**

[1] Nigeria, South Africa; [2] Iran, Lebanon, Marocco, Syria, Tunisia, Dubai UAE; [3] Austria, Croatia, Denmark, France, Germany, Hungary, Lithuania, Norway, Portugal, Romania, Serbia, Spain,Turkey, United Kingdom; [4] Brazil, Canada, Chile, USA; [5] Bangladesh, India, Indonesia, Nepal, Taiwan; 6 Australia, China, Malaysia, Philippines

1=low, 5=excellent ; * one participant's data missing , ** two participants' data missing

5.2. Delphi Process

In the first Delphi round 71 experts from 36 countries named 707 patients' problems, patients' resources or aspects of environment treated by physicians in patients with LBP. One-hundred-ninety-three ICF categories were linked to these answers (see Table 3).

Table 3: Representation of identified ICF categories in the comprehensive ICF Core Set for low back pain: summary of results

	Body Functions	**Body Structures**	**Activities & Participation**	**Environmental Factors**	**Total**
Number of categories identified	66	15	65	47	193
n (%) of categories included in the ICF Core Set	42 (63.6%)	14 (93.3%)	56 (85.2%)	35 (74.5%)	147 (76.2%)
○ at the same level of classification #	15 (22.7%)	3 (20%)	23 (35.4%)	19 (40.4%)	
○ at a different level of classification #	27 (40.9%)	11 (73.3%)	33 (50.8%)	16 (34.0%)	60 (31.1%) 87 (45.1%)
n (%) of categories not included in the ICF Core Set	24 (36.4%)	1 (6.7%)	9 (13.9%)	12 (25.5%)	46 (23.8%)
○ with agreement ≥ 75%	3 (4.6%)	-	-	-	3 (1.6%)
○ with agreement < 75%	21 (31.8%)	1 (6.7%)	9 (13.9%)	12 (25.5%)	43 (22.3%)

The use of a more detailed ICF category (e.g. b1343 Quality of sleep) implies that the less detailed (lower-level) category is applicable.

Sixty-seven of 71 participants (94.4 %) returned the second round questionnaire. The third round questionnaire was completed by 64 of 67 (95.5 %) participants. The results including the percentage of agreement among the participants are presented in tables 4 - 9.

5.3. Linking of the Responses to the ICF

One-hundred-ninety-three ICF categories were linked to the participants' responses. All components of the ICF were represented (see tables 3-9). Twenty-nine second-level categories, 32 third-level and five fourth-level categories of the ICF component *body functions* were linked. Of the ICF component *body structures* four second-, six third- and five fourth-level categories were linked. Twenty-nine second-level and 36 third-level categories of the component *activities and participation*, 27 second- and 20 third-level categories of the component *environmental factors* were linked. Twenty-seven responses were linked to the not yet developed ICF component *personal factors*. Twenty-one responses were found not to be covered by the ICF, finally 91 responses were not defined sufficiently to be linked at all.

The Kappa statistics for the linking was 0.42 with a 95% bootstrapped confidence interval of 0.37-0.48.

5.4. Representation of the physicians' responses in the Comprehensive ICF Core Set for LBP

5.4.1. Body Functions

Fifteen ICF categories of the ICF component *body functions* linked to the participants' responses are represented in the Comprehensive ICF Core Set for LBP at the same level of classification (see table 4). There was a 100% agreement among the participants in the third Delphi round for seven categories to be treated by physicians in patients with LBP. Two of them (*b770 Gait pattern functions, b780 Sensations related to muscles and movement functions*) are included in the Comprehensive Core Set, the other five, namely *b28013 Pain in back, b28015 Pain in lower limbs, b2803 Radiating pain in dermatome* and *b2804 Radiating pain in a segment or region* as well as *b4550 General physical endurance* are represented in the Core Set by the corresponding second-level categories *b280 Sensation of Pain b455 Exercise tolerance functions* respectively. The second-level category *b160 Energy and drive functions* that is listed in the Core Set was represented by three corresponding third-level categories. The three ICF categories *b530 Weight maintenance functions, b6202 Urinary continence* and *b6700 Discomfort associated with sexual intercourse* were not represented in the Comprehensive ICF Core Set for LBP, not even on a lower level, although at least 75% of the participants have rated them as important from the physicians point of view.

Table 4: ICF component Body Functions: ICF categories included in the ICF Comprehensive Core Set for LBP (boldface letters) and ICF categories linked to the participants' responses, but not included in the ICF Comprehensive Core Set (lightface letters). Percentage of participants who considered the respective ICF category as relevant in the last Delphi round

ICF code			**ICF category title**	**final round**
2nd level	3rd level	4th level		n = 64 / %
b126			**Temperament and personality functions**	
b 130			**Energy and drive functions**	
	b1300		Energy level	74.6
	b1301		Motivation	79.4
	b1303		Craving	36.5
b134			**Sleep functions**	**85.5**
	b1341		Onset of sleep	66.1
	b1342		Maintenance of sleep	75.8
b140			Attention functions	38.1
b1400			Sustaining attention	38.7
b147			Psychomotor functions	74.2
b152			**Emotional functions**	**91.9**
	b1522		Range of emotion	61.9
	b1602		Content of thought	30.2
b180			**Experience of self and time functions**	
b260			**Proprioceptive function**	**68.3**
b265			Touch function	55.6
b270			Sensory functions related to temperature and other stimuli	67.7
	b2701		Sensitivity to vibration	35.5
	b2702		Sensitivity to pressure	66.7
b280			**Sensation of pain**	**98.4**
	b2800		Generalized pain	88.9
	b2801		Pain in body part	96.8
		b28010	Pain in head and neck	67.2
		b28012	Pain in stomach or abdomen	40.6
		b28013	Pain in back	100
		b28015	Pain in lower limb	100
		b28016	Pain in joints	90.6
	b2803		Radiating pain in a dermatome	100
	b2804		Radiating pain in a segment or region	100
b455			**Exercise tolerance functions**	**84.4**
	b4550		General physical endurance	100
	b4552		Fatiguability	93.7
b515			Digestive functions	15.9
b525			Defecation functions	54.0
	b5253		Faecal continence	55.6
b530			Weight maintenance functions	85.9
b535			Sensations associated with the digestive system	15.6
	b5352		Sensation of abdominal cramps	15.9

ICF code			ICF category title	final round
2nd level	3rd level	4th level		n = 64 / %
b540			General metabolic functions	7.1
	b6101		Collection of urine	31.3
b620			Urination functions	56.3
	b6202		Urinary continence	76.6
b630			Sensations associated with urinary functions	60.9
b640			**Sexual functions**	**92.2**
b670			Sensations associated with genital and reproductive functions	57.1
	b7101		Mobility of several joints	86.7
b715			**Stability of joint functions**	**81.3**
b720			**Mobility of bone functions**	**71.4**
b730			**Muscle power functions**	**95.3**
	b7300		Power of isolated muscles and muscle groups	95.3
	b7301		Power of muscles of one limb	93.7
	b7303		Power of muscles in lower half of the body	95.2
	b7305		Power of muscles of the trunk	87.5
b735			**Muscle tone functions**	**87.1**
	b7353		Tone of muscles of lower half of body	90.5
	b7355		Tone of muscles of trunk	85.9
b740			**Muscle endurance functions**	**90.6**
b750			**Motor reflex functions**	**82.8**
	b7502		Reflexes generated by other exteroceptive stimuli	51.6
b755			Involuntary movement reaction functions	70.3
	b7602		Coordination of voluntary movements	71.4
b765			Involuntary movement functions	37.5
b770			**Gait pattern functions**	**100**
b780			**Sensations related to muscles and movement functions**	**100**
	b7800		Sensation of muscle stiffness	92.2
	b7801		Sensation of muscle spasm	92.1

5.4.2. Body Structures

Of the component *body structures*, three of the ICF categories linked to the participants' responses are represented in the Comprehensive ICF Core Set for LBP at the same level of classification (see table 5). The two categories *s7702 Muscles* and *s7703 Extra-articular ligaments, fasciae, extramuscular aponeuroses, retinacula, septa, bursae, unspecified* are represented in the Core

Set by the corresponding second-level category *s770 Additional musculoskeletal structures related to movement.*

Table 5: ICF component Body Structures: ICF categories included in the ICF Comprehensive Core Set for LBP (boldface letters) and ICF categories linked to the participants' responses, but not included in the ICF Comprehensive Core Set (lightface letters). Percentage of participants who considered the respective ICF category as relevant in the last Delphi round

ICF code			**ICF category title**	**final round**
2nd level	3rd level	4th level		n = 64 / %
s120			**Spinal cord and related structures**	
		s12002	Lumbosacral spinal cord	98.4
		s12003	Cauda equina	98.4
	s1201		Spinal nerves	98.4
s560			Structure of liver	14.3
s740			**Structure of pelvic region**	**84.4**
s750			**Structure of lower extremity**	**96.9**
		s75002	Muscles of thigh	96.9
		s75012	Muscles of lower leg	98.4
s760			**Structure of trunk**	**92.1**
	s7600		Structure of vertebral column	100
		s76002	Lumbar vertebral column	98.4
	s7601		Muscles of trunk	96.9
	s7602		Ligaments and fasciae of trunk	92.2
s770			**Additional musculoskeletal structures related to movement**	
	s7702		Muscles	96.9
	s7703		Extra-articular ligaments, fasciae, extramuscular aponeuroses, retinacula, septa, bursae, unspecified	85.9

5.4.3. Activities and Participation

Twenty-three categories linked to the ICF component *activities and participation* were represented in the Core Set on the same level of classification (table 6). The third-level category *d6200 Shopping* was linked to the responses

and is represented in the Core Set by the corresponding second-level category *d620 Acquisition of goods and services*.

Table 6: ICF component Activities and Participation: ICF categories included in the ICF Comprehensive Core Set for LBP (boldface letters) and ICF categories linked to the participants' responses, but not included in the ICF Comprehensive Core Set (lightface letters). Percentage of participants who considered the respective ICF category as relevant in the last Delphi round

ICF code			**ICF category title**	**final round**
2nd level	3rd level	4th level		n = 64 / %
d240			**Handling stress and other psychological demands**	**70.3**
	d2401		Handling stress	76.6
d410			**Changing basic body position**	**95.3**
	d4100		Lying down	95.3
	d4101		Squatting	92.2
	d4102		Kneeling	92.1
	d4103		Sitting	98.4
	d4104		Standing	100
	d4105		Bending	98.9
d415			**Maintaining a body position**	**96.9**
	d4150		Maintaining a lying position	87.3
	d4153		Maintaining a sitting position	95.2
	d4154		Maintaining a standing position	98.4
d420			**Transferring oneself**	**92.1**
d430			**Lifting and carrying objects**	**95.2**
	d4300		Lifting	93.8
	d4301		Carrying in the hands	85.9
	d4302		Carrying in the arms	90.6
	d4303		Carrying on shoulders, hip and back	92.2
	d4304		Carrying on the head	73.4
d445			**Hand and arm use**	
d450			**Walking**	**95.2**
	d4501		Walking long distances	92.2
d455			**Moving around**	**93.8**
	d4551		Climbing	92.2
d460			**Moving around in different locations**	
d465			**Moving around using equipment**	
d470			**Using transportation**	**89.1**
d475			**Driving**	**90.6**
	d4751		Driving motorized vehicles	89.1
d480			Riding animals for transportation	65.6
d510			**Washing oneself**	**68.3**
d520			Caring for body parts	56.3
d530			**Toileting**	**66.7**

ICF code			ICF category title	final round
2nd level	3rd level	4th level		n = 64 / %
d540			**Dressing**	**81.3**
d570			**Looking after one's health**	**81.0**
	d5701		Managing diet and fitness	81.3
	d5702		Maintaining one's health	75.0
d620			**Acquisition of goods and services**	
	d6200		Shopping	59.4
d630			**Preparing meals**	**57.8**
d640			**Doing housework**	**92.2**
	d6400		Washing and drying clothes and garments	78.3
	d6401		Cleaning cooking area and utensils	75.0
	d6402		Cleaning living area	81.3
	d6403		Using household appliances	76.6
d650			**Caring for household objects**	**79.4**
d660			**Assisting others**	**70.3**
d710			**Basic interpersonal interactions**	
	d7401		Relating with subordinates	14.1
	d7402		Relating with equals	14.1
	d7500		Informal relationships with friends	17.2
d760			**Family relationships**	**46.0**
d770			**Intimate relationships**	**60.9**
	d7701		Spousal relationships	50.0
	d7702		Sexual relationships	84.4
d840			Apprenticeship (work preparation)	45.3
d845			**Acquiring, keeping and terminating a job**	**76.2**
	d8450		Seeking employment	65.6
	d8451		Maintaining a job	87.5
	d8452		Terminating a job	51.6
d850			**Remunerative employment**	**65.6**
d855			Non-remunerative employment	63.5
d859			**Work and employment, other specified and unspecified**	
d870			Economic self-sufficiency	69.4
d910			**Community life**	**56.3**
d920			**Recreation and leisure**	**92.2**
	d9201		Sports	96.9
	d9202		Arts and culture	38.1
	d9204		Hobbies	25.4
d930			Religion and Spirituality	27.0

5.4.4. Environmental factors

Of the component *environmental factors* nineteen of the ICF categories linked to the participants' responses are represented in the Comprehensive ICF

Core Set for LBP at the same level of classification (see table 7). The two identified categories *e1100 Food* and *e1101 Drugs* are represented in the Core Set by the corresponding second-level category *e110 Products and substances for personal consumption.*

Table 7: ICF component Environmental Factors: ICF categories included in the ICF Comprehensive Core Set for LBP (boldface letters) and ICF categories linked to the participants' responses, but not included in the ICF Comprehensive Core Set (lightface letters). Percentage of participants who considered the respective ICF category as relevant in the last Delphi round

ICF code			**ICF category title**	**final round**
2nd level	3rd level	4th level		n = 64 / %
e110			**Products and substances for personal consumption**	
	e1100		Food	18.8
	e1101		Drugs	75.0
e115			Products and technology for personal use in daily living	53.1
	e1150		General products and technology for personal use in daily living	40.6
	e1151		Assistive products and technology for personal use in daily living	67.2
e120			**Products and technology for personal indoor and outdoor mobility and transportation**	**70.3**
	e1200		General products and technology for personal indoor and outdoor mobility and transportation	51.6
	e1201		Assistive products and technology for personal indoor and outdoor mobility and transportation	64.1
e125			Products and technology for communication	20.3
e135			**Products and technology for employment**	**75.0**
e140			Products and technology for culture, recreation and sport	40.6
e150			**Design, construction and building products and technology of buildings for public use**	
e155			**Design, construction and building products and technology of buildings for private use**	**28.1**
	e1650		Financial assets	9.4
e225			**Climate**	**37.5**
e255			**Vibration**	**36.5**
e310			**Immediate family**	**35.9**
e315			Extended family	10.9
e325			**Aquaitances, peers, collegues, neighbours and community members**	**18.8**
e330			**People in positions of authority**	

ICF code			ICF category title	final round
2nd level	3rd level	4th level		n = 64 / %
e335			People in subordinate positions	17.2
e355			**Health professionals**	**90.6**
e360			**Other professionals**	**34.4**
e410			**Individual attitudes of immediate family members**	**68.3**
e415			Individual attitudes of extended family members	31.8
e425			**Individual attitudes of acquaintances, peers, colleagues, neighbours and community members**	**49.2**
e430			Individual attitudes of people in positions of authority	47.6
e450			**Individual attitudes of health professionals**	**82.5**
e455			**Individual attitudes of other professionals**	
e460			**Societal attitudes**	**70.3**
e465			**Social norms, practices and ideologies**	
e540			**Transportation services, systems and policies**	**57.8**
	e5400		Transportation services	57.8
e550			**Legal services, systems and policies**	**25.8**
	e5500		Legal services	17.2
	e5501		Legal systems	19.1
e565			Economic services, systems and policies	19.1
	e5650		Economic services	25.0
e570			**Social security services, systems and policies**	**68.8**
	e5700		Social security services	79.7
	e5701		Social security systems	75.0
e575			**General social support services, systems and policies**	**62.9**
	e5750		General social support services	63.5
	e5751		General social support systems	61.3
	e5752		General social support policies	57.1
e580			**Health services, systems and policies**	**91.9**
	e5800		Health services	93.8
	e5801		Health systems	90.6
	e5802		Health policies	85.5
e585			**Education and training services, systems and policies**	
e590			**Labour and employment services, systems and policies**	**71.7**
	e5900		Labour and employment services	84.1

5.4.5. Personal Factors

Twenty-seven answers were linked to the not yet developed ICF component *personal factors* (see table 8). They address attitudes, characteristics and qualities that may affect the patients' abilities in dealing with

their health condition. Mainly you can summarize these factors to coping, compliance, lifestyle and behaviour. An agreement of 100% among the participants of the third Delphi round was reached in the item *acceptance of LBP.* Twenty-two more items were considered to be relevant for the treatment of patients with LBP by 75 or more percent of the participating experts.

Table 8: Responses that were linked to the ICF component Personal Factors. Percentage of participants who considered the respective response as relevant in the third round.

Concept	**final round** n = 64 / %
acceptance of LBP	100
compliance	98.4
expectations from medical services and health systems	98.4
body weight	96.9
coping	96.9
ignorance of LBP	96.9
work situation	96.9
ignorance of healthy lifestyle	95.3
physical fitness	95.3
sedentary lifestyle	95.3
avoidant behaviour	93.8
concomitant diseases	92.2
lifestyle	92.2
psychological morbidity	92.2
satisfaction with job	92.2
general health	90.6
education	89.1
cognitive resources	87.1
general behaviour	82.8
self acceptance	81.3
perceiving oneself as victim	76.6
living situation	75.0
profession	73.4
family status	65.6
poor perceived exterior circumstances	50.0
spirituality	34.4

5.4.6. Not Classified

Twenty-one issues were found not to be covered by the ICF classification. Eighteen items reached an agreement of 75 or more percent in the third Delphi round, thirteen even more than 90 percent (see table 9). *Neuropathic pain, non oral drugs, therapies* and *posture* need to be emphasized.

Table 9: Responses that could not be linked to a specific ICF category since the concept is not covered by ICF. Percentage of participants who considered the respective response as relevant in the third round.

Concept	**final round** n = 64 / %
ineffective therapies	98.4
returning the soonest to a normal living	96.9
treatment	96.9
exercises	96.8
misdiagnosis	96.8
neuropathic pain	96.8
need of evidence based medicine as a foundation for all treatments	95.2
workload	93.8
postural control	93.7
posture	93.7
red flags	93.7
avoiding unnecessary or inappropriate treatment	93.6
ergonomics	92.1
few medical causes for LBP in many patients	87.3
non oral drugs	87.3
trigger points	81.3
course of the problems related to the health condition	78.3
rest up to immobilisation	75.0
balance	71.4
groups of symptoms that lead to a syndrome and occur in one diagnostic test	64.5
time consuming research for evidence based medicine	64.1

6. Discussion

Overall the current version of the Comprehensive ICF Core Set for LBP was almost perfectly supported by the experts in our study. More than 75 percent of our participants agreed that in the components *Body Structures, Activities and Participation* and *Environmental Factors* no additional categories are relevant.

6.1. Body Functions

Regarding the component *Body functions* three categories which are not included in the Comprehensive Core Set for LBP yet, were identified by physicians as being important in the treatment of patients with LBP.

6.1.1. Weight Maintenance Functions

The first of these categories is *b530 Weight maintenance functions*. Numerous studies have shown a correlation between increased body weight and musculoskeletal pain hence low back pain (Andersen et al., 2003; Peltonen et al., 2003; de Leboeuf-Y et al., 1999; Freedman et al., 2008; Lake et al., 2000; Stovitz et al., 2008). A positive association between body mass index (BMI) and low back pain that increases with the duration of pain is reported (de Leboeuf-Y et al., 1999). An increased recovery from pain in the back was observed following weight reduction. Previous reports of an excess burden of musculoskeletal pain in obese subjects compared with the general population

have been confirmed (Peltonen et al., 2003). Some studies have investigated pain sensitivity thresholds in relation to obesity. Most indicate that obese subjects have increased pain thresholds (Khimich, 1997; McKendall 1983). Obesity is associated with lower back pain, but it has not been proven to be causal (Freedman et al., 2008). The more sedentary lifestyle of overweight individuals is discussed as an explanation for the increased risk of having musculoskeletal pain in the lower back (de Leboeuf-Y, 1999). Increased BMI was found to be associated with depression, comorbid disability and reduced quality of life for physical function (Marcus, 2004). On the other hand, patients with chronic spinal disorders are at higher risk for obesity because of inactivity, physical deconditioning, and depression (Lake et al., 2000). Medications such as antidepressants and membrane stabilizers also may contribute to weight gain (Freedman et al., 2008). It is recommended that physicians treating musculoskeletal pain may consider weight management as a possible adjunct treatment for the patient that is obese (Stovitz et al., 2008). So the inclusion of the category *b530 Weight Maintenance Functions* might be indicated.

6.1.2. Urinary Continence

The second category identified to be relevant in the treatment of patients with LBP by physicians in our study and not included in the Comprehensive Core Set for LBP is *b6202 Urinary Continence*. Incontinence and back pain may be related because of contribution of the trunk muscles to continence and lumbopelvic control (Smith et al., 2008). Notably, control of the trunk is dependent on activity of muscles such as the diaphragm (Hodges et al.,

1997), transversus abdominis (Hodges et al., 1999), and pelvic floor muscles (Hodges et al., 2002). Reduced postural function of these muscles has been argued to impair the mechanical support of the spine (Smith et al., 2008). It has been shown that the postural activity of the pelvic floor muscles is insufficient in women with incontinence (Deindl et al., 1994). Clinical observations linking urinary urgency and low back pain have been reported, a significant association between incontinence and back problems could be found (Eisenstein et al., 1994; Finkelstein, 2002).

Another more serious cause for urinary incontinence associated with LBP is the Cauda equina syndrome (CES). It is a severe neurologic disorder that results from excessive compression on the cauda equina by lumbar disc herniation, tumours, infection or fracture (Dinning et Schaeffer, 1993; Kostuik et al., 1986; Gautschi et al., 2008). Its clinical features can include severe low back pain, bilateral or unilateral sciatica, saddle anaesthesia, motor weakness, sensory deficits, and urinary incontinence, appearing in different variations (Kostuik et al., 1986; Rai et al., 1973; Choudhury et Taylor, 1980), from chronic back pain and sciatica that gradually progresses to a loss of urinary function, to acute trauma-related sciatic pain with immediate problems with vesicular control. It may even progress to paraplegia and/or permanent incontinence (Ahn et al., 2000; Andersen et Bradley, 1976; Love et Emmet, 1967; Shapiro, 1993; Ross et Jameson, 1971; Yaxley, 1965). Therefore CES is a serious condition that will require an acute surgical intervention if the symptoms, so called “red flags”, occur (Dinning et Schaeffer, 1993; Kostuik et al., 1986; Gautschi et al., 2008; Shapiro, 1993; Yaxley, 1965; Scott, 1965; Tay et Chacha, 1979). Many authors have thought that the onset of CES is heralded by the onset of disturbances of

urinary function and/or rectal disorders (Kostuik et al., 1986; Ahn et al., 2000, Love et Emmet, 1967; Shapiro, 1993; Tay et Chacha, 1979). Just as the presentation of CES can vary, so does the presentation of the vesicular abnormalities associated with it, including altered urethral sensation, loss of desire to void, poor stream, feeling of retention, and micturition by straining (Nielsen et al., 1980).

Therefore the category *b620 Urination functions* might be more suitable to describe patients' problems than just the third-level category *b6202 Urinary incontinence*. However, since there were only first- and second-level categories included in the Comprehensive Core Set for LBP (Cieza, Stucki et al., 2004), it seems to be adequate to affiliate the second-level category that is representing the third-level category identified by the experts in our study.

6.1.3. Discomfort Associated with Sexual Intercourse

The third category considered to be relevant in the treatment of LBP by our participating physicians is *b6700 Discomfort associated with sexual intercourse*, represented by the second-level category *b670 Sensations associated with genital and reproductive functions* that also is not part of the Comprehensive Core Set for LBP. As sexuality is an important aspect of quality of life (Rainville et Sobel, 1997), the inclusion of this issue in the Core Set should be considered in addition to the already present category *b640 Sexual functions.*

A negative effect of chronic LBP on sexual activity could be revealed in 46% of the patients in a cross-sectional study (Duquesnoy et al., 1998). In another study (Osborne et Maruta, 1980) two thirds of the patients with back

pain reported deterioration in sexual adjustment. Patients' greatest worries seem to be related to the possibility of triggering pain (Maigne et Chatellier, 2001). Indeed, LBP may be worsened by pelvic movements during intercourse and by certain positions. In one study the most pain generating coital position was found to be prone for both genders, the most comfortable positions for patients with LBP were supine and sometimes side-lying (Maigne et Chatellier, 2001). Women are more affected by sexual dysfunction and discomfort than men (Maigne et Chatellier, 2001; Sjogren et Fugl-Meyer, 1981). It was found that women with low back pain experienced disabling pain at a higher rate than men (Cote et al., 1998). In addition, in women chronic pain more frequently is associated with dysfunctional coping strategies, such as catastrophizing (Jensen et al., 1994).

You can sum up that both genders are definitely restricted in their sexual life by LBP, in men chiefly attributable to a fear of triggering pain and in women in the context of psychological factors, like depression and lack of interest in sexual activity (Maigne et Chatellier, 2001).

6.2. Personal Factors

A considerable number of the participants' responses was identified as *Personal Factors*. Sixteen issues have reached a final agreement of more than 90 percent. This indicates the importance of personal factors for the physicians' treatment of patients with LBP, as already stated in a former survey (Weigl et al., 2006). According to the ICF terminology personal factors are contextual factors that relate to the individual (World Health Organization, 2001). Some personal

factors may contribute to disability by mediating from pain to disability (Wessels et al., 2006). The personal factors identified in this survey mostly refer to coping and lifestyle.

A person's coping style is one of the most widely recognized personal factors that affect the experience of disability. Coping refers to the cognitive, emotional and behavioural strategies that patients employ to manage their disease (Weigl et al., 2008). Patients suffering from LBP show a great variety of coping strategies and pain behaviour (Lloyd et al., 2008; Skouen et al., 2002). Experienced clinicians will observe some persons with severe pain-producing pathology coping well with their problem and maintaining meaningful lifestyles, while others with minimal problems become extremely dysfunctional (Rainville et Sobel, 1997). Pain behaviour-guarding (Prkachin et al., 2002) was identified among the best predictors of disability. Anticipatory guarding may lead to increased muscular activation and pain (Skouen et al., 2002), which in turn may lead to even more distress, more guarding, and more disability. On the other hand a reduction in the perceived threat of the activity and the disconfirmation of negative beliefs is likely to lead to improved ability to predict pain, resulting in a decrease in hypervigilance and threat evaluation which, in turn, results in a decrease in anxiety and avoidance as well as reductions in catastrophising (Woods et Asmundson, 2007). Organic pain beliefs are associated with increased catastrophising in patients with chronic LBP (Sloan et al., 2008). Doctors should promote positive coping strategies at an early stage and reduce catastrophic behaviour patterns (Burton et al., 1995). High levels of fear-avoidance beliefs occur early in LBP patients, and key messages on this topic should probably be delivered when the disability first shows itself (Choudeyre et

al., 2007). In the early stage of LBP, the reduction of pain and fear-avoidance beliefs might increase the level of activity, which might foster increased participation in daily and social life activities (Swinkels-Meewisse et al., 2006).

One final step of coping with a condition can be acceptance, which reached an agreement of 100% in our final Delphi round. Especially in a non-specific disease, like LBP, it is difficult for the patients to gain closure in the process of accepting their pain and suffering, and the fact that the pain is chronic. Being able to define the pain as such can then help to take the next step towards adapting one's lifestyle (Corbett et a., 2007).

The effect of lifestyle factors such as physical activity, body weight and substance abuse on disability is supported by literature (Weigl et al., 2008; Freedman et al., 2008; Andersson, 1999). Patients suffering from LBP have demonstrated negative health habits associated with a higher rate of illness (Frymoyer et al., 1985). Therefore, lifestyle interventions potentially affect risk factors for LBP in a positive way (Mattila et al., 2007). However, despite significant effects on everyday and personal experiences associated with an increased risk of chronicization, it is reported that treatments given to LBP patients consist mainly of symptomatic medication, whereas only one third receives advice regarding appropriate diet and lifestyle (Duquesnoy et al., 1998). Nevertheless, communication (Skouen et al, 2002) is one of the most important elements in the treatment of patients with LBP. Sincerely communicating that the patient's pain is being taken seriously and providing clear instructions will increase compliance (Dworkin et al., 2003). Different health professionals saying different things to the patient may decrease compliance and lead to a chronic condition in patients at risk. The patient must become a partner in the process,

contributing at almost every decision or action level to receive a treatment individually tailored to his needs (Weigl et al., 2008; Holman et Lorig, 2000).

These findings stress the need to develop the component *Personal Factors* in future revisions of the ICF, in order to achieve a more comprehensive and complete description of relevant aspects influencing a patient's functioning and health.

6.3. Not Classified Concepts

Several issues raised in our survey that reached an agreement of more than 75 % in the final Delphi round, are not classified at all by the ICF.

6.3.1. Posture

One of them – posture – was already identified and found to be missing in the validation of the comprehensive ICF Core Set for rheumatoid arthritis from the perspective of physical therapists (Kirchberger et al., 2007). Literature supports the importance of this issue in handling back pain: as mentioned above, the postural activity of the muscles of the trunk is important for the functional integrity of the spine (Smith et al., 2008; Hodges et al., 1997; Hodges et al., 1999; Hodges et al., 2002). Takeyachi et al. evaluated and classified posture in patients suffering from LBP and found the restriction of functional status to be highly correlated with poor posture (Takeyachi et al., 2003). Therefore the development of an adequate category in the ICF and its inclusion in the comprehensive ICF Core Set for LBP are suggested.

6.3.2. Non-oral drugs

The next point that needs to be stressed is the role of non-oral drugs in the physicians' treatment of patients with LBP. Epidural injections of anaesthetics and/or steroids (Bernstein, 2001), intrathekal opioids (Koulousakis et al., 2007; Rathmell, 2008), intramuscular NSAIDs (Simon, 1987), intravenous NMDA (N-Methyl-D-Aspartat) receptor antagonists (Finnerup et al., 2005; Finnerup et al., 2007), transdermal opioids (Allan et al., 2005), facet blocks (Rathmell, 2008) and paravertebral injections of botulinum toxin (Jeynes et Gauci, 2008) have been proposed in literature and mostly found to be proficient. The ICF category *e110 products or substances for personal consumption* includes drugs in its definition; nonetheless this definition contains the phrase "for ingestion", which in this survey was related to oral medication only. So a supplement here might be useful to factor non-oral drugs into this already existing category.

6.3.3 Neuropathic Pain

Another issue not sufficiently covered by the ICF is neuropathic pain. The ICF category *b280 sensations of pain* includes in its definition a broad spectrum of sensations, but the organization in the referring third- and forth-level categories can not be looked upon as being satisfying in matters of LBP. The categories *b2800 generalized pain* to *b2802 pain in multiple body parts* concerning different body parts and the categories *b2803 radiating pain in a dermatome* and *b2804 radiating pain in a segment or region* do not cover the full

complexity of the differing pain qualities. However, the quality of pain plays a crucial role in choosing the appropriate therapy. Since neuropathic pain correlates with more intense pain and more severe co-morbidity such as depression, panic/anxiety and sleep disorders, and poorer quality of life with all accompanying effects on functionality and health-care resources than nociceptive pain (Freynhagen et al., 2006), it seems to be necessary for it to have an adequate representation in the ICF. In an unselected cohort of chronic LBP patients, 37% were found to have predominantly neuropathic pain (Freynhagen et al., 2006). Compression or damage to a nerve root by a protruded intervertebral disc or an inflammatory aetiology are suspected to be the main causes of radicular LBP, which is therefore a combination of neuropathic, skeletal, and myofascial mechanisms (Dworkin et al., 2003; Freynhagen et al., 2008). Combined nociceptive and neuropathic presentation is often associated with chronic pain disorders (Forde, 2007). Since these components require different pain management strategies and first-line treatment approaches, correct pain diagnosis before and during treatment is highly desirable (Dworkin et al., 2003; Finnerup et al., 2005; Freynhagen et al., 2006; Freynhagen et al., 2008).

However, diagnosing neuropathic pain can be difficult. Although chronic neuropathic back pain is probably the most prevalent pain syndrome to which neuropathic mechanisms contribute, there are no accepted diagnostic criteria for identifying this neuropathic component (Dworkin et al., 2003). Neuropathic pain is characterized by partial or complete somatosensory change in the innervation territory corresponding to peripheral or central nervous system pathology, and the paradoxical occurrence of pain and hypo- and/or hypersensitivity

phenomena, like allodynia and hyperalgesia, within the denervated zone and its surroundings (Finnerup et al., 2007; Forde, 2007; Jensen et al., 2001). It is likely to be chronic and may be a spontaneous ongoing pain described in terms such as burning, pricking, sharp, squeezing, or dominated by attacks of pain like electric shocks or shooting pain (Finnerup et al., 2007). Other associated signs and symptoms may be atrophy of the skin and other soft tissue; alterations in hair growth; and loss of joint mobility (Forde, 2007). Complex patterns of signs and symptoms may necessitate the involvement of multiple medical specialties (Dworkin et al., 2003).

Whereas both types of pain respond to several drugs such as opioids and tramadol, only nociceptive pain is sensitive to NSAIDs (Dworkin et al., 2003; Roelofs et al., 2008). Tricyclic antidepressants and gabapentin/ pregabalin are today the first drug choices in the treatment of neuropathic pain, and their effect is widely supported (Finnerup et al., 2005). Subgroup analyses of a randomized placebo-controlled trial suggested that patients who had chronic radicular low back pain responded best to treatment with nortriptyline hydrochloride (Atkinson et al., 1998). Unfortunately, benefits of pharmacotherapy for improving the quality of life, including physical and emotional function, have been found less frequently than for reducing pain intensity (Dworkin et al., 2003).

Due to their crucial role in opting for the adequate treatment strategy, the implementation of suitable categories for the differing qualities of pain in the ICF is recommended, in order to have an eligible tool for creating a comprehensive functioning profile.

6.3.4. Health Conditions

Several *health conditions* related to LBP were named by the experts, most of all depression. Having their own classification in the ICD-10 (World Health Organization, 2005), these conditions will not be dealt with here. It is important to separate the assessment of disease and disability dimensions, and to utilize these constructs jointly using both the International Classification of Diseases (ICD) and the ICF classification (Weigl et al., 2006). The joint use of the ICF and the International Classification of Diseases (ICD-10) needs to be addressed when applying the ICF to medical practice. The WHO considers the ICF and the ICD-10 to be distinct but complementary classifications (Cieza, Ewert et al., 2004).

6.4. Metholodical Aspects

The Delphi technique proved to be an appropriate method for this study objective. With response rates between 85.5 and 95.5 percent in the single rounds the reported attrition rates of approximately 50% could be clearly surpassed (Geschka, 1977).

The Kappa statistics for the linking in our survey was 0.42. Kappa values generally range from 0 to 1, whereby 1 indicates perfect agreement and 0 indicates no additional agreement beyond what is expected by chance alone (Vierkant, 2007). The kappa coefficient of 0.42 reached in this study reflects a barely “moderate” agreement between the two persons who performed the linking (Altman, 1998). It is slightly lower than in other studies that used the

same linking method (Kirchberger et al., 2008, Kirchberger et al., 2007, Kirchberger et al., 2007).

There is a multitude of reasons why kappa may not be a reliable summary measure (Feinstein et Ciccetti, 1990; Guggenmoos-Holzmann et Vonk, 1998; Guggenmoos-Holzmann, 1993). Still, a low kappa requires attention regarding possible reasons (Grill et al., 2007). A possible explanation for the lower calibre in this study is that two health professionals from different backgrounds and native languages were involved in the linking process. They were at a similar level of training, but without much experience in linking together. This should be taken into account for the selection and training of health professionals in future studies.

Participants from all of the six world regions defined by the World Health Organization could be recruited, guaranteeing a wide range of expert opinion. That indicates that LBP is an overall existing condition not confined to the developed countries with their affluent societies. LBP has been found to be a significant, underestimated problem in many rural societies combining poor economic conditions with subsistence farming, and impairing health and productivity. Common activities such as collecting water, harvesting, and carrying heavy objects, including children, increased the risk of LBP (Hoy et al., 2003). LBP usually is unrecognized for social reasons (Ehrlich, 2003). Medication acquisition costs vary greatly depending on the geographic region, on insurance or industry health plans, and on the availability of pharmaceutical company programs for patients without drug benefit plans (Dworkin et al., 2003). Liberal compensation systems play a role in prolonging LBP (Ehrlich, 2003). The chapter *services, systems and policies* which included the highest number of

categories was discussed at length during the development of the comprehensive ICF Core Set for LBP because of the relevance of inter-country differences (Cieza, Stucki et al., 2004).

7. Conclusion

The Comprehensive ICF Core Set for LBP defines which areas are relevant in relation to functioning in patients with LBP and consequently what to measure. Therefore they can be used as a starting point in the assessment of a patient, providing a common standardized language for health professionals. A functioning profile can be created and subsequently used to document intervention goals and as a reference for follow-up, promoting patient-orientated goal setting and treatment and not just a disease-orientated treatment.

Beside this, scores that combine the information of all single ICF categories into a few numbers are expected to be useful in clinical practice. Data collected within the ongoing international validation study will be used to develop such scores, as recently demonstrated for the ICF Core Sets for Osteoarthritis (Cieza, Hilfiker et al., in press). Finally, as the Comprehensive ICF Core Set for LBP defines w h a t, but not h o w to measure, future studies could focus on the operationalization of the ICF categories.

The results of ongoing studies involving both health professionals and patients will further eludicate the validity of the Comprehensive Core Set for LBP from different perspectives. The findings of all validation studies will be

considered during the revision process, which in turn may result in a modified version of the Comprehensive Core Set for LBP.

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9. Attachments

9.1. Comprehensive ICF Core Set for Low Back Pain

Body Functions

ICF Code 2nd level 3rd level 4th level	ICF Category Title
b126	**Temperament and personality functions**
b130	**Energy and drive functions**
b134	**Sleep functions**
b152	**Emotional functions**
b180	**Experience of self and time functions**
b260	**Proprioceptive functions**
b280	**Sensation of pain**
b455	**Exercise tolerance functions**
b620	**Urination functions**
b640	**Sexual functions**
b710	**Mobility of joints functions**
b715	**Stability of joint functions**
b720	**Mobility of bone functions**
b730	**Muscle power functions**
b735	**Muscle tone functions**
b740	**Muscle endurance functions**
b750	**Motor reflex functions**
b770	**Gait pattern functions**
b780	**Sensations related to muscles and movement functions**

Body Structures

ICF Code 2nd level 3rd level 4th level	ICF Category Title
s120	**Spinal cord and related structures**
s740	**Structure of the pelvic region**
s750	**Structure of lower extremity**
s760	**Structure of trunk**
s770	**Additional musculoskeletal structures related to movement**

Activities and Participation

ICF Code			ICF Category Title
2nd level	3rd level	4th level	
d240			**Handling stress and other psychological demands**
d410			**Changing basic body position**
d415			**Maintaining a body position**
d420			**Transferring oneself**
d430			**Lifting and carrying objects**
d445			**Hand and arm use**
d450			**Walking**
d455			**Moving around**
d460			**Moving around in different locations**
d465			**Moving around using equipment**
d470			**Using transportation**
d475			**Driving**
d510			**Washing oneself**
d530			**Toileting**
d540			**Dressing**
d570			**Looking after ones health**
d620			**Acquisition of goods and services**
d630			**Preparing meals**
d640			**Doing housework**
d650			**Caring for household objects**
d660			**Assisting others**
d710			**Basic interpersonal interactions**
d760			**Family relationships**
d770			**Intimate relationships**
d845			**Acquiring, keeping and terminating a job**
d850			**Remunerative employment**
d859			**Work and employment, other specified and unspecified**
d910			**Community life**
d920			**Recreation and leisure**

Environmental factors

ICF Code	ICF Category Title
2nd level 3rd level 4th level	
e110	**Products or substances for personal consumption**
e120	**Products and technology for personal indoor and outdoor mobility and transportation**
e135	**Products and technology for employment**
e150	**Design, construction and building products and technology of buildings for public use**
e155	**Design, construction and building products and technology of buildings for private use**
e225	**Climate**
e255	**Vibration**
e310	**Immediate family**
e325	**Acquaintances, peers, colleagues, neighbours and community members**
e330	**People in positions of authority**
e355	**Health professionals**
e360	**Other professionals**
e410	**Individual attitudes of immediate family members**
e425	**Individual attitudes of acquaintances, peers, colleagues, neighbours and community members**
e450	**Individual attitudes of health professionals**
e455	**Individual attitudes of other professionals**
e460	**Societal attitudes**
e465	**Social norms, practices and ideologies**
e540	**Transportation services, systems and policies**
e550	**Legal services, systems and policies**
e570	**Social security services, systems and policies**
e575	**General social support services, systems and policies**
e580	**Health services, systems and policies**
e585	**Education and training services, systems and policies**
e590	**Labour and employment services, systems and policies**

9.2. Questionnaire of the First Delphi Round

Delphi Exercise: Round 1 **Health Profession: Physician**

What are the patients' problems, patients' resources and aspects of environment treated by physicians in patients with low back pain ?

Please list your answers in the following lines.
Please try to use only one line per patients' problem, per patients' resource or per aspect of the environment.

Some information about yourself:

Age ____ **years**
Gender ____

Specialties/Certifications ____

Current professional activity ____

Professional experience ____ **years**

Practical experience with patients with low back pain ____ **years**

Do you treat low back pain patients mainly in the ...

... acute situation ? ____
... early-postacute situation ? ____
... chronic situation ? ____

How would you rate your expertise in the treatment of patients with low back pain ?

Please chose an number between
1 (low) and 5 (excellent) ____

9.3. Questionnaire of the Second Delphi Round

Delphi Exercise: round 2 - physicians, first page

Do you agree that this ICF category represents patients' problems, patients' resources or aspects of the environment treated by physicians in patients with low back pain ?

ICF code	ICF category title	ICF category description	YES/NO
b1300	Energy level	Mental functions that produce vigour and stamina.	
b1301	Motivation	Mental functions that produce the incentive to act; the conscious or unconscious driving force for action.	
b1303	Craving	Mental functions that produce the urge to consume substances, including substances that can be abused.	
b134	Sleep functions	General mental functions of periodic, reversible and selective physical and mental disengagement from one's immediate environment accompanied by characteristic physiological changes.	
b1341	Onset of sleep	Mental functions that produce the transition between wakefulness and sleep.	
b1342	Maintenance of sleep	Mental functions that sustain the state of being asleep.	
b140	Attention functions	Specific mental functions of focusing on an external stimulus or internal experience for the required period of time.	
b1400	Sustaining attention	Mental functions that produce concentration for the period of time required.	
b147	Psychomotor functions	Specific mental functions of control over both motor and psychological events at the body level.	
b152	Emotional functions	Specific mental functions related to the feeling and affective components of the processes of the mind.	

9.4. Results of the Second and Third Delphi Round

Body Functions

ICF code			ICF category title	round 2 n = 67 %	round 3 n = 64 %
2nd level	3rd level	4th level			
b126			**Temperament and personality functions**		
b 130			**Energy and drive functions**		
	b1300		Energy level	67.2	74.6
	b1301		Motivation	71.6	79.4
	b1303		Craving	43.3	36.5
b134			**Sleep functions**	**79.1**	**85.5**
	b1341		Onset of sleep	61.2	66.1
	b1342		Maintenance of sleep	62.7	75.8
b140			Attention functions	53.0	38.1
b1400			Sustaining attention	51.5	38.7
b147			Psychomotor functions	68.7	74.2
b152			**Emotional functions**	**82.1**	**91.9**
	b1522		Range of emotion	64.6	61.9
	b1602		Content of thought	47.0	30.2
b180			**Experience of self and time functions**		
b260			**Proprioceptive function**	**64.2**	**68.3**
b265			Touch function	59.1	55.6
b270			Sensory functions related to temperature and other stimuli	60.6	67.7
	b2701		Sensitivity to vibration	43.1	35.5
	b2702		Sensitivity to pressure	64.2	66.7
b280			**Sensation of pain**	**97.0**	**98.4**
	b2800		Generalized pain	80.6	88.9
	b2801		Pain in body part	97.0	96.8
		b28010	Pain in head and neck	68.7	67.2
		b28012	Pain in stomach or abdomen	46.3	40.6
		b28013	Pain in back	100	100
		b28015	Pain in lower limb	98.5	100
		b28016	Pain in joints	80.6	90.6
	b2803		Radiating pain in a dermatome	98.5	100
	b2804		Radiating pain in a segment or region	95.5	100
b455			**Exercise tolerance functions**	**73.1**	**84.4**
	b4550		General physical endurance	80.6	100
	b4552		Fatiguability	88.1	93.7
b515			Digestive functions	17.9	15.9
b525			Defecation functions	55.2	54.0
	b5253		Faecal continence	56.7	55.6
b530			Weight maintenance functions	77.6	85.9
b535			Sensations associated with the digestive system	29.9	15.6
	b5352		Sensation of abdominal cramps	29.9	15.9
b540			General metabolic functions	20.9	7.1
	b6101		Collection of urine	44.8	31.3

ICF code			ICF category title	round 2	round 3
				n = 67	n = 64
2nd level	3rd level	4th level		%	%
b620			Urination functions	53.7	56.3
	b6202		Urinary continence	67.2	76.6
b630			Sensations associated with urinary functions	50.7	60.9
b640			**Sexual functions**	**77.6**	**92.2**
b670			Sensations associated with genital and reproductive functions	52.2	57.1
	b7101		Mobility of several joints	80.6	86.7
b715			**Stability of joint functions**	**78.8**	**81.3**
b720			**Mobility of bone functions**	**62.1**	**71.4**
b730			**Muscle power functions**	**86.6**	**95.3**
	b7300		Power of isolated muscles and muscle groups	86.6	95.3
	b7301		Power of muscles of one limb	86.6	93.7
	b7303		Power of muscles in lower half of the body	86.6	95.2
	b7305		Power of muscles of the trunk	70.1	87.5
b735			**Muscle tone functions**	**86.4**	**87.1**
	b7353		Tone of muscles of lower half of body	82.1	90.5
	b7355		Tone of muscles of trunk	80.6	85.9
b740			**Muscle endurance functions**	**77.6**	**90.6**
b750			**Motor reflex functions**	**70.1**	**82.8**
	b7502		Reflexes generated by other exteroceptive stimuli	53.7	51.6
b755			Involuntary movement reaction functions	67.2	70.3
	b7602		Coordination of voluntary movements	66.7	71.4
b765			Involuntary movement functions	47.8	37.5
b770			**Gait pattern functions**	**95.5**	**100**
b780			**Sensations related to muscles and movement functions**	**85.1**	**100**
	b7800		Sensation of muscle stiffness	83.6	92.2
	b7801		Sensation of muscle spasm	86.6	92.1

Body Structures

ICF code 2nd level	3rd level	4th level	ICF category title	round 2 n = 67 %	round 3 n = 64 %
s120			**Spinal cord and related structures**		
		s12002	Lumbosacral spinal cord	95.5	98.4
		s12003	Cauda equina	100	98.4
	s1201		Spinal nerves	100	98.4
s560			Structure of liver	19.4	14.3
s740			**Structure of pelvic region**	**71.6**	**84.4**
s750			**Structure of lower extremity**	**85.1**	**96.9**
		s75002	Muscles of thigh	86.6	96.9
		s75012	Muscles of lower leg	88.1	98.4
s760			**Structure of trunk**	**89.6**	**92.1**
	s7600		Structure of vertebral column	95.5	100
		s76002	Lumbar vertebral column	98.5	98.4
	s7601		Muscles of trunk	92.5	96.9
	s7602		Ligaments and fasciae of trunk	86.6	92.2
s770			**Additional musculoskeletal structures related to movement**		
	s7702		Muscles	92.5	96.9
	s7703		Extra-articular ligaments, fasciae, extramuscular aponeuroses, retinacula, septa, bursae, unspecified	78.8	85.9

Activities and Participation

ICF code			ICF category title	round 2 n = 67 %	round 3 n = 64 %
2nd level	3rd level	4th level			
d240			**Handling stress and other psychological demands**	**64.2**	**70.3**
	d2401		Handling stress	73.1	76.6
d410			**Changing basic body position**	**91.0**	**95.3**
	d4100		Lying down	93.9	95.3
	d4101		Squatting	88.1	92.2
	d4102		Kneeling	85.1	92.1
	d4103		Sitting	95.5	98.4
	d4104		Standing	95.5	100
	d4105		Bending	95.5	98.9
d415			**Maintaining a body position**	**95.5**	**96.9**
	d4150		Maintaining a lying position	79.1	87.3
	d4153		Maintaining a sitting position	92.5	95.2
	d4154		Maintaining a standing position	93.9	98.4
d420			**Transferring oneself**	**86.6**	**92.1**
d430			**Lifting and carrying objects**	**91.0**	**95.2**
	d4300		Lifting	88.1	93.8
	d4301		Carrying in the hands	76.1	85.9
	d4302		Carrying in the arms	86.4	90.6
	d4303		Carrying on shoulders, hip and back	83.6	92.2
	d4304		Carrying on the head	63.6	73.4
d445			**Hand and arm use**		
d450			**Walking**	**92.4**	**95.2**
	d4501		Walking long distances	92.5	92.2
d455			**Moving around**	**91.0**	**93.8**
	d4551		Climbing	89.6	92.2
d460			**Moving around in different locations**		
d465			**Moving around using equipment**		
d470			**Using transportation**	**80.6**	**89.1**
d475			**Driving**	**87.5**	**90.6**
	d4751		Driving motorized vehicles	80.6	89.1
d480			Riding animals for transportation	61.2	65.6
d510			**Washing oneself**	**71.6**	**68.3**
d520			Caring for body parts	62.7	56.3
d530			**Toileting**	**70.1**	**66.7**
d540			**Dressing**	**82.1**	**81.3**
d570			**Looking after one's health**	**71.6**	**81.0**
	d5701		Managing diet and fitness	79.1	81.3
	d5702		Maintaining one's health	66.7	75.0
d620			**Acquisition of goods and services**		
	d6200		Shopping	58.2	59.4
d630			**Preparing meals**	**65.7**	**57.8**
d640			**Doing housework**	**86.6**	**92.2**
	d6400		Washing and drying clothes and garments	62.1	78.3
	d6401		Cleaning cooking area and utensils	65.7	75.0

ICF code			ICF category title	round 2 n = 67	round 3 n = 64
2nd level	3rd level	4th level		%	%
	d6402		Cleaning living area	75.8	81.3
	d6403		Using household appliances	71.2	76.6
d650			**Caring for household objects**	**71.6**	**79.4**
d660			**Assisting others**	**66.7**	**70.3**
d710			**Basic interpersonal interactions**		
	d7401		Relating with subordinates	23.9	14.1
	d7402		Relating with equals	26.9	14.1
	d7500		Informal relationships with friends	31.3	17.2
d760			**Family relationships**	**50.0**	**46.0**
d770			**Intimate relationships**	**55.2**	**60.9**
	d7701		Spousal relationships	47.8	50.0
	d7702		Sexual relationships	66.7	84.4
d840			Apprenticeship (work preparation)	52.2	45.3
d845			**Acquiring, keeping and terminating a job**	**71.6**	**76.2**
	d8450		Seeking employment	62.7	65.6
	d8451		Maintaining a job	73.1	87.5
	d8452		Terminating a job	56.7	51.6
d850			**Remunerative employment**	**63.6**	**65.6**
d855			Non-remunerative employment	62.1	63.5
d859			**Work and employment, other specified and unspecified**		
d870			Economic self-sufficiency	59.1	69.4
d910			**Community life**	**64.2**	**56.3**
d920			**Recreation and leisure**	**79.1**	**92.2**
	d9201		Sports	85.1	96.9
	d9202		Arts and culture	50.7	38.1
	d9204		Hobbies	46.3	25.4
d930			Religion and Spirituality	37.3	27.0

Environmental Factors

ICF code 2nd level	3rd level	4th level	ICF category title	round 2 n = 67 %	round 3 n = 64 %
e110			**Products and substances for personal consumption**		
	e1100		Food	37.3	18.8
	e1101		Drugs	70.1	75.0
e115			Products and technology for personal use in daily living	53.7	53.1
	e1150		General products and technology for personal use in daily living	44.8	40.6
	e1151		Assistive products and technology for personal use in daily living	64.2	67.2
e120			**Products and technology for personal indoor and outdoor mobility and transportation**	**64.2**	**70.3**
	e1200		General products and technology for personal indoor and outdoor mobility and transportation	55.2	51.6
	e1201		Assistive products and technology for personal indoor and outdoor mobility and transportation	64.2	64.1
e125			Products and technology for communication	31.3	20.3
e135			**Products and technology for employment**	**62.1**	**75.0**
e140			Products and technology for culture, recreation and sport	49.3	40.6
e150			**Design, construction and building products and technology of buildings for public use**		
e155			**Design, construction and building products and technology of buildings for private use**	**48.5**	**28.1**
	e1650		Financial assets	26.9	9.4
e225			**Climate**	**46.3**	**37.5**
e255			**Vibration**	**47.8**	**36.5**
e310			**Immediate family**	**43.3**	**35.9**
e315			Extended family	28.4	10.9
e325			**Aquaitances, peers, collegues, neighbours and community members**	**35.8**	**18.8**
e330			**People in positions of authority**		
e335			People in subordinate positions	26.9	17.2
e355			**Health professionals**	**85.1**	**90.6**
e360			**Other professionals**	**41.8**	**34.4**
e410			**Individual attitudes of immediate family members**	**68.8**	**68.3**
e415			Individual attitudes of extended family members	46.3	31.8
e425			**Individual attitudes of acquaintances, peers, colleagues, neighbours and community members**	**56.7**	**49.2**
e430			Individual attitudes of people in positions of authority	53.7	47.6
e450			**Individual attitudes of health professionals**	**83.6**	**82.5**
e455			**Individual attitudes of other professionals**		
e460			**Societal attitudes**	**61.2**	**70.3**
e465			**Social norms, practices and ideologies**		
e540			**Transportation services, systems and policies**	**58.2**	**57.8**
	e5400		Transportation services	56.7	57.8
e550			**Legal services, systems and policies**	**43.9**	**25.8**
	e5500		Legal services	36.4	17.2
	e5501		Legal systems	35.8	19.1

ICF code 2nd level	3rd level	4th level	ICF category title	round 2 n = 67 %	round 3 n = 64 %
e565			Economic services, systems and policies	37.9	19.1
	e5650		Economic services	41.8	25.0
e570			**Social security services, systems and policies**	**68.2**	**68.8**
	e5700		Social security services	75.8	79.7
	e5701		Social security systems	70.8	75.0
e575			**General social support services, systems and policies**	**61.9**	**62.9**
	e5750		General social support services	59.0	63.5
	e5751		General social support systems	54.7	61.3
	e5752		General social support policies	58.5	57.1
e580			**Health services, systems and policies**	**84.6**	**91.9**
	e5800		Health services	86.2	93.8
	e5801		Health systems	81.3	90.6
	e5802		Health policies	76.2	85.5
e585			**Education and training services, systems and policies**		
e590			**Labour and employment services, systems and policies**	**64.5**	**71.7**
	e5900		Labour and employment services	71.2	84.1

Personal Factors

Concept	round 2 n = 67 / %	round 3 n = 64 / %
acceptance of LBP	97.0	100
avoidant behaviour	82.1	93.8
body weight	95.5	96.9
cognitive resources	77.6	87.1
compliance	89.6	98.4
concomitant diseases	89.6	92.2
coping	85.1	96.9
education	85.1	89.1
expectations from medical services and health systems	92.5	98.4
family status	68.7	65.6
general behaviour	77.6	82.8
general health	92.4	90.6
ignorance of healthy lifestyle	95.5	95.3
ignorance of LBP	86.4	96.9
lifestyle	89.6	92.2
living situation	73.1	75.0
perceiving oneself as victim	74.6	76.6
physical fitness	89.6	95.3
poor perceived exterior circumstances	59.1	50.0
profession	74.6	73.4
psychological morbidity	86.6	92.2
satisfaction with job	80.6	92.2
sedentary lifestyle	85.1	95.3
self acceptance	71.6	81.3
spirituality	43.3	34.4
work situation	83.6	96.9

Not Classified

Concept	round 2 n = 67 / %	round 3 n = 64 / %
avoiding unnecessary or inappropriate treatment	87.9	93.6
balance	67.7	71.4
course of the problems related to the health condition	73.8	78.3
ergonomics	87.9	92.1
exercises	92.4	96.8
few medical causes for LBP in many patients	71.2	87.3
groups of symptoms that lead to a syndrome and occur in one diagnostic test	65.2	64.5
ineffective therapies	90.9	98.4
misdiagnosis	92.4	96.8
need of evidence based medicine as a foundation for all treatments	84.6	95.2
neuropathic pain	90.9	96.8
non oral drugs	75.8	87.3
postural control	83.3	93.7
posture	84.8	93.7
red flags	84.8	93.7
rest up to immobilisation	66.7	75.0
returning the soonest to a normal living	90.9	96.9
time consuming research for evidence based medicine	65.2	64.1
treatment	92.4	96.9
trigger points	77.3	81.3
workload	84.8	93.8

9.5. ICF Definitions

Body Functions are the physiological functions of the body systems (including psychological functions).

Body Structures are the anatomical parts of the body such as organs, limbs and their components.

Impairment is a loss or abnormality in body structure or physiological function (including mental functions).

Activity is the execution of a task or action by an individual.

Participation is a person's involvement in a life situation.

Activity limitations are difficulties an individual may have in executing activities.

Participation restrictions are problems an individual may experience in involvement in life situations.

Environmental Factors make up the physical, social and attitudinal environment in which people live and conduct their lives.