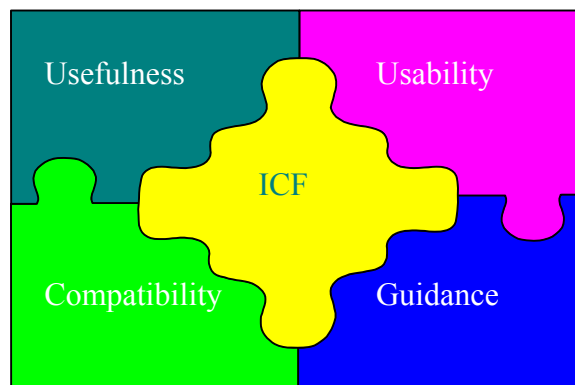


RESEARCH

THE USE OF “INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY
AND HEALTH” (ICF) IN DANISH REHABILITATION.



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INTRODUCTION

The International Classification of Functioning, Disability and Health (ICF) is a classification developed by the World Health Organization (WHO) to provide a framework for the description of health and health related conditions (1). This article describes a pilot study carried out for the Danish WHO approved ICF-Study Site, MarselisborgCentret. The purpose was to conduct a survey of the use of ICF in connection with implementation in rehabilitation in Scandinavia.

Classification of functioning

ICF is the latest version of WHO's classification of functioning and was endorsed by World Health Assembly, Geneva, May 2001 (1). The development of ICF was based on experience of the use of the International Classification of Impairment, Disability and Handicap (ICIDH), endorsed in 1980. In 1993 the WHO started a thorough revision based on a reconsideration of the ICIDH. The vision was to accommodate the development in health care from diagnosis orientation towards a broader concept of health and health-related conditions, including social aspects (1-3). In July 1999 the classification was available as the ICIDH-2 Beta-2 Draft (4). ICIDH-2 as a bio-psychosocial model met international needs and attracted a great deal of interest within research, scientific journals and clinical practice (5,6).

Classification systems are tools for sorting and organizing complex elements of reality into a comprehensible and logical form. The predominant uses of medical classifications today are for outcome, intervention responses and communication of experience (7). Bowker and Star claimed that medical classifications only provide a "snapshot" and are unable to reflect the complex, timeless nature of disease in interaction with the actual context, e.g. infrastructure or culture (7, p.173). Possible causes and coherence between functioning, health conditions and context will not be examined. The WHO wanted to meet this universal critique of classifications by including contextual factors (1, 2, 6).

Aims and content of the ICF

The ICF was introduced by the WHO as a multipurpose classification for science, health care management, clinical practice, communication and education (1). In this way the content of

ICF is more than just a classification. It presents an Interactive Model for functioning and disability (fig.1). Classifications can, as does the ICF, contain conceptual foundations framed in a model (8). In the ICF's Interactive Model, functioning is an umbrella term for the following components: body function and structure, activity and participation. The term covers positive aspects of interaction between the individual (with his or her health conditions) and context (environmental and personal factors). Disability is similarly an umbrella term for the negative aspects of the interaction. The model is considered as neutral – it is a description of the actual situation, brings the components together and identifies positive and negative aspects (1).

The classification allows a systematic description of the components (apart from personal factors) by coding in four levels. Each coding should contain a qualifier that indicates the actual health level and possible problems. Two set of qualifiers can be used: a *performance qualifier*, which describes what individuals are doing in their current environment and a *capacity qualifier*, which describes what individuals are doing in a uniform environment. Yet development of tools and manuals for the use of ICF are lacking (1).

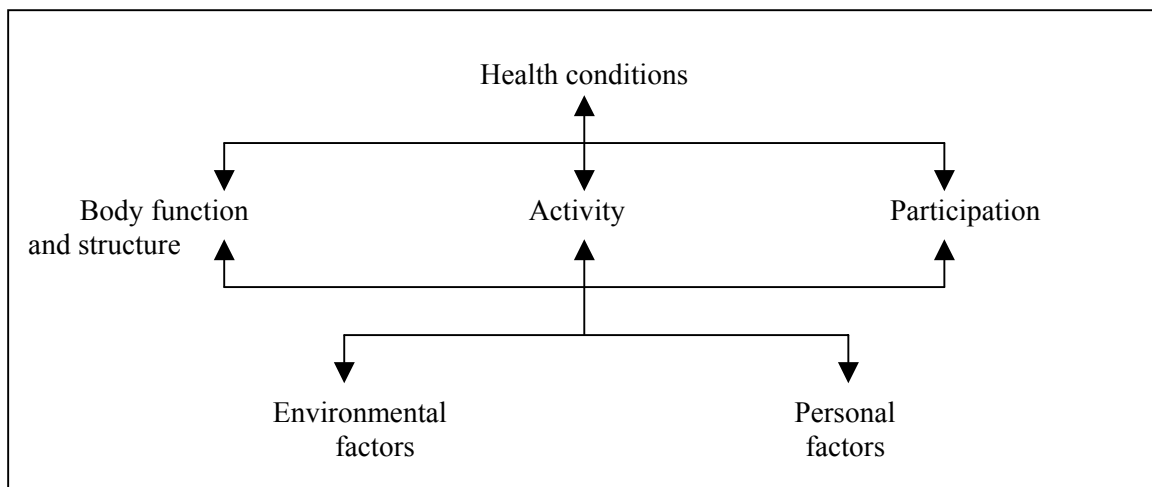


Figure 1: The ICF's Interactive Model (1)

Implementation of the ICF in the Nordic countries

Many countries have participated in developing the ICF (5). In the Nordic countries the work has been coordinated by the WHO Collaborating Center for Classification of Disease in the Nordic Countries. Different strategies have been chosen for translation and implementation at a national level, but in general the health professionals have shown greater interest in using the ICIDH-2, and later the ICF, in clinical work rather than following WHO's procedures for

field trials (5). The Nordic collaboration had a common wish to map where and how the classification was used. The national implementation differed from one country to another and this affected the conditions for mapping the use. In Iceland and Finland the base was estimated too small, while Sweden, Norway and Denmark still had a common interest in the mapping. In Denmark and Sweden the ICDH-2 was translated in 2000, while Norway did not translate the ICDH-2 (6,9). In all the three countries there have been seminars and workshops about the ICDH-2. As the WHO Study Site in Denmark had the opportunity to initiate this research, they decided to do so, because it considered that knowledge about the use in an early phase of the implementation and the experience from the research could be useful in later research in Norway and Sweden.

The use of the ICF in Denmark

Health care professionals involved in rehabilitation in Denmark started early to use the classification in practical work. The conceptual background of ICF met the need for a common language. This need had been growing as a result of rehabilitation being directed towards more holistic aims (10). With improving living conditions through the 20th century, health care issues have moved from simply caring about prolonging life to caring about the quality of this life (11,12). Against this background rehabilitation has become an increasingly important issue in society, and health care aims have been reformulated towards a client-centred perspective (3,13). To support the rehabilitation process, there is a need for close co-operation between health care professions and sectors. This has been an important issue in health care politics over the last 10 years (9).

If the WHO's aim with the ICF is to be fulfilled, it is necessary to focus on its usefulness in practical work. Every day practice requires a sense of rationality. When considering a change in practice, the advantages and disadvantages of training health care staff, time and costs are assessed (14). Comprehensiveness of use demands ease of use, keeping in mind central concepts, efficiency and low bias. Success implies user-satisfaction (1,5,15,16).

Occupational therapy

Just like other health care professionals, occupational therapists have shown great interest in the classification internationally, from when the ICDH-2 became available (3, 6,17-22). Reality in practical work together with clients demands attention to detail and the ability to

change within the situation as it is described through the clinical reasoning of occupational therapists (23). In their focus on the correlation between human occupation and health, functioning and disability are central concepts, forming part of assessment and objectives for intervention (24,25). But the work of one health care profession is only one contribution to the process of the client's rehabilitation and is to be seen as part of a common issue in a multidisciplinary team. Communication between the persons involved becomes an important tool (3).

Use of experience

It was surprising that health care professionals in Denmark started to use the classification before the final version, the ICF, was available. As pointed out by the WHO in international discussions, there are still many unclarified issues (9). To broaden perspectives on this, practical experience from health care professionals' use of the classification in the transition from the draft, ICIDH-2, to the final version, ICF, should be studied to identify needs for further development and implementation of the ICF.

Aims of the research

The aim of this research was to survey the use of the ICF and the ICIDH-2 with regard to further implementation in rehabilitation practice in Denmark. Occupational therapists' focus on the implementation should be studied. The research is also intended to be a pilot study before corresponding research in Norway and Sweden is undertaken.

Research questions.

What is health care professionals' evaluation of the usefulness of the ICIDH-2 and the ICF in rehabilitation in Denmark? What aspects of occupational therapists' implementation are of special interest?

METHOD:

The study is a cross-sectional survey and a questionnaire was chosen as a suitable tool for collecting data (26-29). Participants were asked to supplement the questionnaire by enclosing material illustrating the use.

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The questionnaire was tested in a rehabilitation setting in Norway and in Denmark, carried out in English. Afterwards, the three Danish participants were interviewed. The test was carried out before the endorsement of the ICF, but after the Pre-final Draft was available. As a consequence of the test, the operationalisation of the user-profile was expanded in a revision of the questionnaire (7,15,16). Supplying material from the test supported this process. The language was changed to the national language because of the risk of bias and lack of participation (26-29).

Population:

Participants were chosen through snowball sampling (26) in the ICIDH-2 network in Denmark. It is a non-probability, non-random sampling method used to obtain a sample when the population is unknown (26). Potential participants were asked directly and were also asked to suggest other possible participants (such as from collaborative rehabilitation settings). Potential new participants were asked, and this continued until no new participants were proposed.

Criteria for inclusion: Health care professionals in rehabilitation settings in Denmark, using the ICIDH-2/ICF in practical work with a clinical and/or research purpose. Each participant represents the rehabilitation setting from their daily work and is expected to be familiar with the use of the classification in the setting.

Criteria for exclusion: Health care professionals in acute hospital settings, nursing homes and habilitation. Use of the old version, the ICIDH. Knowledge of the classification without use in practical work.

Design of the questionnaire

The questionnaire was designed specifically for this study. The content was organized on the basis of guidelines for changing practice (14), and the structure was: information about participator and rehabilitation setting, knowledge of ICIDH-2/ICF, use of ICIDH-2/ICF, evaluation of usefulness and perspectives. In the enclosed instruction participants were told that the research covered the use of both the ICF and the ICIDH-2. In the questionnaire they were asked which versions were in use in their rehabilitation setting. Concepts from ICIDH-2 were used in the questionnaire because all participants were familiar with the ICIDH-2.

Questions were formulated with the intention that the answers would have a qualitative content, but that in the analysis it should be possible to categorize and compare data. All groups of questions were supplied with the opportunity to comment (26, 28).

Checklists were mostly used in mapping the use of the ICIDH-2/ICF, because qualitative-oriented questions could then be formulated as questions with sufficient categories that could be answered with ticks. There were instructions for mutually exclusively categories to choose only one, and for mutually complementary categories to choose one or more. All checklist questions had a category "Other" to include any items not otherwise covered.

Ordinal scales were mostly used for evaluation about the change in focus on the components in functioning and evaluation of usability of the ICIDH-2/ICF. Questions typically had five options for response, with the median option as neutral.

The content was based on operationalisation of central concepts in ICIDH-2/ICF (1,30) and parts of the WHO's questionnaire about ICIDH-2 (Basic Questions) (31). In forming an overview of the organisation and conceptualisation in changing practice in the rehabilitation settings, inspiration was taken from guidelines for changing professional practice (14).

Participants' evaluation of the usefulness of the classification was operationalised from a model (fig.2) which presents usefulness in relation to many other factors which should be considered in changing practice (14, 15, 16,32).

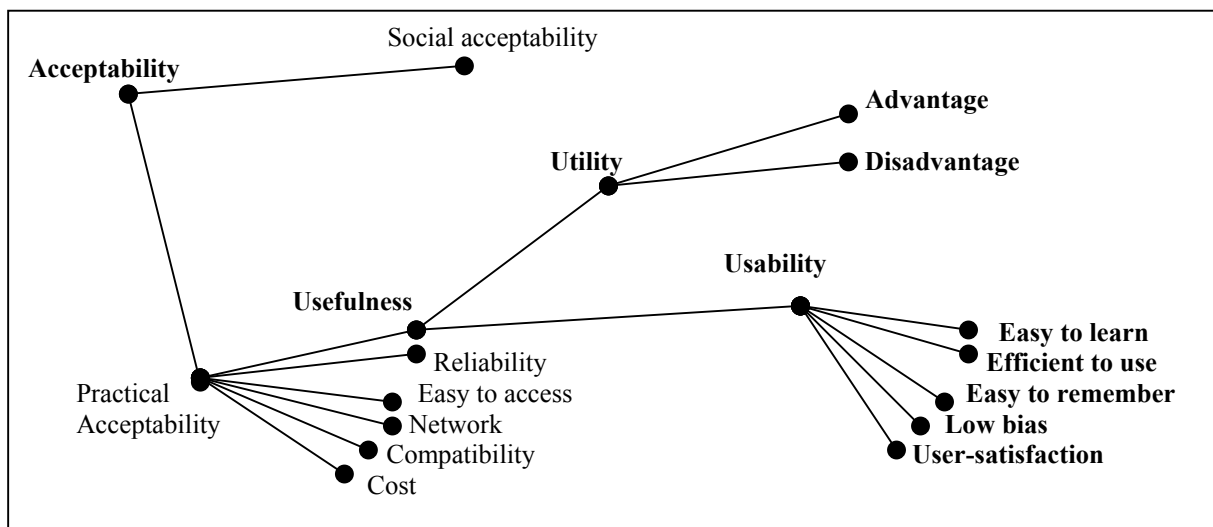


Figure 2: Model according to J. Nielsen (15, 16): The attributes of acceptability

Usefulness. As a concept, usefulness is seen as a part of practical acceptability. Usefulness is the issue of whether the classification can be used to achieve desired goals (15, 16).

Operationalisation is illustrated by examples from the questionnaire:

"Are you able to identify one or more reasons why your rehabilitation setting started to use the ICFIDH-2/ICF?"

"How well do you think the ICFIDH-2/ICF covers your goals for use? Very well/Well/Neutral/Not very well/not at all"

And the participants were asked to evaluate the usefulness of ICFIDH-2/ICF based on ICFIDH-2 Field Trials study 2, Basic Questions (31) and their attention to central concepts.

Usefulness was further divided into two categories (15, 16):

Utility: Is the issue of whether the functionality of the classification can in principle cover what is needed in practical work. Utility was evaluated by asking for advantages and disadvantages of use:

"What do you especially consider as advantages/ disadvantages of the use of the ICFIDH-2/ICF?"

"What has promoted/restricted the use of the ICFIDH-2/ICF?"

Usability: The concept has multiple components, traditionally associated with five usability attributes (16):

Easy to learn: *"How has it been in general for new staff members to learn how to use the ICFIDH-2/ICF as you do? Very easy/ Easy/ Neutral/ Difficult/ Very difficult"*

Efficiency: *"How well is the use of the ICFIDH-2/ICF integrated with the use of tools for assessment? Very well/ Well/ Neutral/ Not so well/ Not at all"*

Easy to remember: *"How easy is it to remember and discriminate superior concepts/ dimensions, modifiers and levels in the ICFIDH-2/ICF? Very easy/ Easy/ Neutral/ Difficult/ Very difficult"*

"How often do you have to use the concepts/ coding to ensure good quality? Daily/ Weekly/ A couple of times in a month/ A few times"

Low bias: *"How often do misunderstandings and doubts about concepts of ICFIDH-2/ICF and their use occur? Name the three most common cases"*

User-satisfaction: *"How do the staff who are using the classification in daily practical work respond to the ICFIDH-2/ICF? Very positively/ Positively/ Neutral/ Negatively/ Very Negatively"*

The questionnaire was developed with supervision from "Biostatistisk Institut", Copenhagen, and critically reviewed by two ICF experts. The questionnaire was sent by mail to participants in September 2001, with one month to reply.

Analysing data

In sociologically orientated research, quantitative data has a descriptive character and is mostly based on questions with ordinal scales, which allows the data to be sorted into ranks, but without fixed intervals (26, 27, 28, 29). Data was reduced, frequency was analysed, extreme answers and missing answers were analysed. Calculations of medians were made and data was sorted in ranks where possible (29).

Qualitative data was sorted via taxonomy-analysis (26). Comments from the space "Other" in checklists were sorted in categories on same level as the other categories in the checklist. Comments about utility were sorted in categories characterizing the participants' evaluation of the use of the classification.

Tests and assessments used to classify functioning and disability in practical work were analysed and listed with a description of aim and methods. There was an analysis of which of the first level components from the ICF were covered and if capacity and/or performance was tested. A person from the profession and with knowledge of both the test and the ICF was asked to make the same analysis.

Enclosed material was listed, sorted into categories of characters and purpose. It was analysed for the use of ICIDH-2/ICF terminology and whether functioning and disability were described in other terms (1, 4, 26).

RESULTS:

Twenty-one people agreed to participate and met the criteria for inclusion.

Twenty participants returned answered questionnaires. Ten had enclosed material which illustrated the use. Five received reminders and returned questionnaires after the deadline. One participant asked for extra time and returned the response after the deadline.

Responses to the questionnaire varied a lot. Some filled it in very carefully, some skipped more detailed questions and a single person stopped after filling in one third of

the questions. The most apparent trend was that participants doing research skipped many questions.

Information about participants and rehabilitation settings:

Eleven occupational therapists, three physical therapists, two physicians, one social worker, two nurses and one speech therapist participated. Of these, nine had management functions and seven participated in projects about developing the use of ICIDH-2/ICF. Thirteen are working in rehabilitation settings, three in hospitals; one is in a specialized setting and four in research. Eleven are working with limited target groups: seven with brain injuries, three with older people and one with children. They are all fairly experienced but many of them are working in new settings.

The use of the ICIDH-2/ICF:

Three settings started to use the ICIDH in 1996/97. About half of the settings started to use the ICIDH-2 before the new millennium, and in 2001 the last five settings started to use the ICIDH-2/ICF. The use of the short version of the ICIDH-2, Beta-2 Draft is predominant. It is mostly used as an inspiration and mostly to develop multidisciplinary teams.

For half of the participants, the presentation of Pre-final Draft and endorsement of ICF for had no effect on the use. Others had discussed the content, felt uncertain or would “wait and see”. One setting renewed the implementation. One commented that, *“We translated the Final Draft ourselves, when it was available”*, another that, *“We have only used the latest versions.”*

The use of the ICIDH-2/ICF is concentrated in the areas of clinical practice, cross-professional and cross-sectorial co-ordination. Participants were asked about the use on four levels: the model, components, domains and categories at different levels and coding. Only the model and components are used more than sporadically (table 1). One comment was: *“We are not able to use domains and coding”*. Splitting the group into two halves, one consisting of occupational therapists and one with other participants, showed that most of the others were using the classification for research as well. But it was the occupational therapists who were using both levels.

The participants commented that it is hard to make this evaluation. The use of the ICIDH-2/ICF is in the very early stages and some only use the classification experimentally for a

small client group: *"We are still at the beginning of a process"*. This could explain why about one third did not answer questions about the use (table 1).

Table 1: The use of ICIDH-2/ICF in occupational therapy and other health care professions in rehabilitation (median)

Areas	Group	n	Categories (Md)	
			Model	Components
Management	O	8	2,5	2
	H	6	2,5	0
	A	14	2,5	0,5
Research	O	8	1,5	1,5
	H	5	4	0
	A	13	2	1
Clinical Practice	O	8	3,5	3,5
	H	4	4	0
	A	12	4	3
Cross-professional	O	9	4	3
	H	4	4	0
	A	13	4	2
Cross-sectorial	O	8	2	2
	H	3	3,5	0
	A	11	2	0

O = Occupational therapists; H = Other health care professionals; A = All participants
 Scale step 4-0 (4 = Daily (routine); 3 = Weekly (often); 2 = A couple of times a month (seldom); 1 = Few times (Experiment); 0 = Never.)

Looking at the general aims of ICIDH-2/ICF, the use in the settings was predominantly as a common language for describing health and health-related states. It fits well into the position in areas as showed in table 1. Seven stated that ICIDH-2/ICF is also used as a conceptual foundation, a frame of reference or similar. Even though management is not marked as a dominant area of the use (table 1), one third of the settings gave examples of using the classification for planning and organising rehabilitation and working tasks.

Usefulness.

The predominant reason to use the ICIDH-2/ICF in the settings was to optimise goal-setting regarding the clients' daily life and furthermore need was expressed for the development of cross-professional and cross-sectorial co-operation and client-centred practice. Supplying needs was also mentioned:

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”Mostly development in a new setting” — ”The need is connected to developing tools for assessment of functioning and disability.” – ”ICIDH-2 seemed to be close to our earlier conceptual foundation, so we had an eye on the ICIDH-2 during the revision in 1999”

To evaluate the usefulness, participants were asked to grade characteristics of the classification (table 2). The trend was central, even when split into two groups, and was therefore interpreted as somewhat neutral, although it seems as if grading flexibility, simplicity and clarity is more negative. Low answers on flexibility could be explained by the very short period of use and thus too little experience to make a judgment. This could also be the explanation for the low answers about acceptance. Though client-centred practice is expressed as an important issue, clients are apparently not involved in using the ICIDH-2/ICF.

Table 2: Usefulness of the ICIDH-2/ICF in rehabilitation and in occupational therapy.

Usefulness of ICIDH-2/ICF	Md	Rank	A		O	
			(Md)	n	(Md)	n
As common language	3	Cross-professional	3	17	3	9
		Cross-sectorial	3	17	3	9
		In Denmark	3	16	3	9
		Internationally	3	13	3	6
Structure of ICIDH-2/ICF	2,5	Meaningful	3	17	3	9
		Comprehensive	3	17	3	9
		Flexible	3	13	2,5	6
		Simple	2	17	2	8
		Clear	2	16	2	8
Acceptance	2	By professionals	2	12	2,5	6
		By clients	2	6	2	2

A = All participants; O = Occupational therapists

Scale step 4-1 (4 = Totally agree; 3 = Mostly agree; 2 = Somewhat agree; 1 = No;)

Even though participants found evaluation of the usefulness hard and their grading was rather neutral, thirteen agreed, when asked that ICIDH-2/ICF gives a broad view and a unified whole to the intervention. Half found ICIDH-2/ICF a suitable tool for co-operation and rehabilitation planning. And one third thought that ICIDH-2/ICF highlighted the resources of the client and increased the quality of the rehabilitation. These statements had a positive and more detailed character, which should be considered together with table 2.

Usefulness was also evaluated by grading the attention to core concepts of the classification compared to that before the use. Attention to functioning, disability and

contextual factors had increased, except for body functions and structures (table 3). You could not talk about extremes, but body function and structure had 3 as median, because 3 participants marked “decreased”. Altogether, the use of ICIDH-2/ICF showed more attention to core concepts. No difference was seen in occupational therapists’ evaluation (Table 3).

Table 3: Increased/decreased attention to functioning and its components after the use of ICIDH-2/ICF compared to before the use in rehabilitation and in occupational therapy.

Attention	Components	A (Md)	n	O (Md)	n
Functioning and disability	Body functions and structures	3	14	3	8
	Activity	4	14	4	8
	Participation	4	14	4	8
Contextual factors	Environmental	4	14	4	8
	Personal	4	13	4	8

A = All participants; O = Occupational therapists
 Scale step 5-1 (5 = Highly increased; 4 = Increased; 3 = As before; 2 = Decreased; 1 = Highly decreased;)

The usefulness of central concepts is clarified by the comments: “ *e.g. participation: ICIDH-2 has clarity, ICF mixes concepts* ” - “ *It is inappropriate to mix activity and participation. That is why we have chosen to use ICIDH-2 on the level of participation, but it is also to some degree inconsistent in levels of detail.* ”

Utility.

Advantages by using the ICIDH-2/ICF was, that it gave a unified whole to the rehabilitation by providing a common language:

“ *A more holistic approach and a broader perspective in rehabilitation.* ” – “ *Understanding the human as a being, not just a body* ” - “ *Cross-professional and cross-sectorial co-operation with a common model* ” – “ *It has given a common frame of reference and consciousness and understanding of what goals our intervention identifies* ” - “ *Easier to explain the clients’ situation to other health care professionals and to the client* ”

Participants saw the use of ICIDH-2/ICF as a way to improve quality:

“It has started a development, giving better use of resources and increased quality, I hope” – “Systematic and consistent data collecting.” – “To be able to discriminate between concepts” – “Give a whole set of unique and consistent information about the client from the hospital to the municipality” – “It moves the concern from diagnoses and practice to resource possibilities.”

Disadvantages were most of all seen as related to coding. It was explained as confusing about concepts, time-consuming and missing instructions:

“The Danish translation creates doubt about the concepts of function, functioning and disability” - “We most of all used the Interactive Model. We have had many discussions about discriminating activity and participation” - “It is hard to be specific about the clients’ resources and problems from the chosen items, even though it can be supplied by text.” - “Coding does not make sense and is too time-consuming”- “We choose other tools when assessing functioning and disability, because ICIDH-2/ICF has no instructions about how to decide whether you have an issue to be solved – and how severe it is” - “We have developed the practical use from the bottom up, and we introduced ICIDH-2/ICF to the municipality and we have tried to stimulate general use”.

Altogether the evaluation of utility shows dilemmas concerning the use and points out that the ICIDH-2/ICF has been a helpful tool for changing practice. Participants note the disadvantages, and cope with them by adjusting or reducing the use.

Usability

Data has been sorted and ranked on the basis of interpretation concerning content, frequencies of answers and level of median (table 4). User-satisfaction was fairly high, compared to acceptance, which was graded low (table 2). It shows a discrepancy between users and a general acceptance.

Remembering levels of coding and low bias had the lowest grading (table 4). The low grading of these two items may be connected. This trend is intensified when comparing with doubt and misunderstandings when using the classification (figure 3).

Table 4: Evaluation of the usability of the ICIDH-2/ICF in rehabilitation and in occupational therapy.

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Usability	Rank	A		O	
		(Md)	n	(Md)	n
User-satisfaction		4	17	4	8
Easy to learn		3	12	3	9
Low bias		2,5	14	3	9
Efficient to use	Integration	4	12	4,5	8
	Time	3	12	3	8
	Economy	3	11	3	8
Easy to remember	Concepts	3	14	4	9
	Levels for coding	2	13	2,5	8

A = All participants; O = Occupational therapists;

Scale step 5-1 (5 = Very (easy to learn); 4 = (easy to learn); 3 = Neutral;

2 = (difficult to learn); 1 = Very (difficult to learn);)

Occupational therapists graded low bias, integration with tests and assessments and ease of remembering more positively than the other participants. Comparing this with the use, illustrated in table 1, could indicate that the occupational therapists in this study have used it comprehensively, and the experience from this was reflected in their responses on usability.

Most common doubts and misunderstandings were:

- The concept function and where it belongs (function/functioning).
- That it is interactive, what is activity and what is participation?
- To distinguish between activity and participation. To interpret the level of participation.
- Doubt about levels. Mixing the Interactive Model and the classification.
- A uniform environment – what is that?
- Definitions that are very broad and cover both easy to complex parts.

Figure 3: Doubts and misunderstandings

Physical therapists agreed with occupational therapists on integration with other tests and assessments, whereas rest of the participants did not answer or did not agree. Enclosed material from therapists showed that functioning, disability and concepts like those of the components were all ready part of the technical terms. A brief overview of a comparison between items in assessments used at the settings and the ICF confirms this (fig.4 (33-42)).

Figure 4: Assessments of functioning used in clinical practice compared to first level items in the ICF.

	Body function and structure	Activity and Participation	Environment	Performance/ Capacity
BAS (33)	Movement functions and structure	Mobility	No	Performance
McKenzie (34)	Movement functions and structure	Mobility	No	Performance
CT-50 (35)	Mental functions Sensory functions	Learning Communication	No	Capacity
A-ONE (36)	Mental functions Sensory functions Movement functions and structure	Communication Mobility; Self-care	No	Performance
FIM (37)	Mental functions	Communication Mobility; Self-care Interpersonal interaction	No	Performance
Barthel Index (38)	No	Mobility Self-care	No	Performance
ADL-Taxonomy (39)	No	Communication Mobility; Self-care Domestic life	No	Performance
AMPS (40)	No	Domestic life	No	Performance
COPM (41)	No	Primarily self-care, work and leisure	No	Performance
FKF (42)	No	Communication Interpersonal interaction	Attitudes	Performance

CONCLUSION FROM RESULTS

At most rehabilitation settings, classification was taken into use when ICIDH-2 was available in Danish. It was predominantly used for communication in clinical practice and in cross-professional co-operation. The classification was used as a common language and the Interactive Model was used as a frame of reference and for organising rehabilitation. Besides this the classification was only used experimentally and mostly for development. The use was mostly initiated by a need for better goal setting concerning the client's activities in daily life. The evaluation must therefore be seen from that point of view.

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Twenty rehabilitation settings participated, represented by one staff-member, familiar with the use in the setting. The very small sample means that conclusions about the results can only be stated as tendencies.

The classification was evaluated as being useful as common language. The structure of ICIDH-2/ICF was evaluated somewhat lower and the classification is not seen as simple and clear. Flexibility was only evaluated by a few. This could be explained by misunderstandings and doubts about the use, as seen in the comments. ICIDH-2/ICF covers functioning in a comprehensive manner and attention has increased with regard to functioning, activity, participation, environmental and personal factors, while body function and structure had the same or a slightly decreased attention compared to before the use.

Utility was evaluated *positively* for the Interactive Model, a common language to promote teamwork and co-operation and by improving quality in rehabilitation. Utility was evaluated *negatively* for the structure of the classification, which is seen as complicated. The main disadvantages were confusion about concepts, time consumed and missing instructions.

Usability was evaluated positively for user-satisfaction and integration with tests and other assessment tools. Levels for coding and low bias had a negative evaluation. Other than this, the evaluation was neutral.

Occupational therapists formed half of the participants (11 of 20). They were different from other participants on some issues: they were using the classification more comprehensively (model and components), but only a few used the classification cross-sectorially and for research. They evaluated usability more positively on low bias, integration with tests and other assessment tools and ease of remembering.

DISCUSSION

Discussion of method:

The sampling method. Even though snowball sampling takes in all possible participants until the same rehabilitation settings occur again, it does not guarantee that all potential participants have been found. It reduces the precision of the research and the possibility to generalize, because the sample is not representative. Nonetheless, with this reservation and the fact that it was a very small sample, it was tempting to compare occupational therapists, which formed half of the sample, to the other half of the population. They only differed on a few issues. This

could be interpreted as positive in terms of the consistency of the questionnaire, and the differences could highlight issues for further research.

Since the research was carried out, more rehabilitation settings have started implementation of the ICF, so the population could be bigger today. If the research were to be repeated, the sample of the population should be representative of rehabilitation settings and health care professions, and should be narrowed down to clinical rehabilitation practice.

Missing responses. As participants had agreed to participate beforehand and reminders were sent in the case of missing responses, the overall response rate was 95 %. A high level of response does not in itself indicate a high value of responses, as some questions were not answered. One participant stopped after filling in one third of the questionnaire. Participants who were primarily involved in research replied to several questions that they were not relevant. Responsiveness tended to decrease through the questionnaire, but was not uniform. The tendency was that questions about details had a lower number of responses. Some questions had only been filled in by very few. This could be due to too little experience of the participants, unclear wording, or questions about items not current. As a consequence, the questionnaire should be revised. Leaving out questions about knowledge of the ICIDH-2/ICF could shorten it. Instead the criteria for inclusion should be extended. The section about perspectives could be left out, because it is obvious that the answers are based on experience of use. This can also be interpreted from evaluation of the usefulness. The population should be narrowed down to consist of health care professionals in clinical rehabilitation practice, because the questionnaire targets this group.

Reliability: No comparison with other research projects about the use of the ICIDH-2/ICF has been possible. Internal consistency has been developed by construction of scales. The items in the scales were critically analysed by comparing items and by controlling the operationalisation of variables.

Also, internal consistency in a survey with a sociological approach can be improved by using sets of questions matching the same category or, as in this research, by using checklists. By providing a set of options, the possibility of covering all participants is increased.

No extremes in responses could be explained with a fair consistency. But on the other hand, missing responses could mask a lack of consistency.

Content Validity The research is cross-sectional, and as such it shows the use at that time, about half a year after the endorsement of the ICF. It was a dilemma, because the ICIDH-2 was available in the Danish version from May 2000, and this raised interest among Danish health care professionals. The only possibility to try to validate this issue was simply to ask the participants which versions of the ICIDH-2/ICF were in use at the setting. Those who used the ICF, only used it as inspiration, except for one setting, which has chosen to make a provisional translation of the ICF. Responses in general show that nearly no changes had been made in daily routines after the Danish version of ICIDH-2 was available. Because most of the participants have used the Interactive Model and not the levels for coding, there are fewer possibilities for bias because of the use of different versions. Some of the responses support this interpretation. On questions about how easy it is to differentiate concepts at different levels in the classification, participants evaluate the superior concepts as easy, but the inferior concepts as more difficult. However, there were some semantic problems, e.g. confusion about the fact that dimensions in the ICIDH-2 are named as components in the ICF. Operationalisation was made through a literature review and the choice of well-defined concepts, represented by their components in the questions. The questionnaire has been tested, supplied by an interview of test-participants and critically evaluated by two ICF experts (26, 28).

Discussion of the use and the usefulness

The use of the ICIDH-2/ICF. The use is in the very early stages, so very few other studies are available. At the present time it has only been possible to find one article about the use of the ICIDH-2 in clinical practice. At a rehabilitation setting at RiTø in Norway they have been using the ICIDH since 1996, followed up by later versions, for development of tools to organize cross-professional co-operation (43). The use at RiTø corresponds to what this study found: it is the main structure, the Interactive Model and superior concepts (the components), that are used as a frame of reference, common language and as inspiration. RiTø has made a form for planning rehabilitation using the dimensions of the ICIDH-2 as a structure. Lower levels are used to make keywords in relation to the dimensions, but coding is not used.

Usefulness. The change of focus from the individual's body function and structure to a more holistic focus is confirmed by the participants' evaluation of this as a positive change, that indicates that the ICIDH-2/ICF has given more attention to activity, participation and contextual factors. As personal factors are not operationalised in the classification, but are nonetheless given more attention, this could be a cue to the conclusion that the Interactive Model is the main inspiration to clinical practice. It is an important tendency, because it supports cross professional and cross-sectorial work and implementation of the ICF as a common language.

The WHO encourages client-centred practice (1). This is also part of a general aim for development in Danish health care. The expectations are that the individual will change from being a patient or client to being an active user of the system (44). The participants may have a client-centred perspective, but have only very sporadic thoughts about the clients as active users of the ICIDH-2/ICF. In the client-centred perspective as well as in the Interactive Model there are intentions of changing focus from risk and problem orientation to resource orientation (1, 2, 6). Participants underlined that it is important to have a common understanding of the client's situation and to have a common language for communication. It seems as if WHO is able to cover this through the ICF. The Interactive Model can be seen as an "umbrella-model", which allows test-results and other information to be positioned in relation to each other and which can be used systematically, cross-professionally as well. It will make it easier to form a whole picture of functioning of the individual.

But together with these positive angles, it is important to consider how to handle the experience of a complicated, ambiguous structure that creates doubts about its use. The classification has been developed to meet several needs, and guidance for use on different levels would be of great value.

Utility. Participants are concerned about the clients, teamwork and quality. From their comments about advantages and disadvantages it is very clear that discussions about concepts and the structure of ICF have caused confusion. Maybe the flexibility that is intended with the ICF is not understood, or there is no agreement, for example with the possibility of overlapping activity and participation. Disadvantages should be given attention and might need more detailed research than this study could carry out.

Usability. The participants' evaluations of the use in relation to tests and assessment tools are that the ICIDH-2/ICF is well integrated. A number of tests and assessments of functioning cover some of the components in the ICF (fig.4). No test covers all the components. The reason for the great interest in using the ICIDH-2/ICF could be that the classification is consistent with what is already in use in clinical practice. A study in 1991 tested and found good compatibility between the ICIDH and assessment tools. A group of Dutch occupational therapists developed a registration form based on the ICIDH. They tested the reliability of the form in occupational therapy diagnosis and found both inter and intra-reliability so good that they found the form useful for survey research. Even though this is about the ICIDH, the study can point towards classification of functioning as being suitable as a common language, both in clinical rehabilitation practice and in research (45).

A study compared items in some commonly used tests of functioning of the dimension activity in the ICIDH-2. The conclusion was that the tests primarily test mobility and self-care, while the dimension of activity also covers learning and applying knowledge, communication, domestic, interpersonal skills and major life tasks. It is suggested that tests should be developed to cover the whole dimension (46). From the brief overview comparing assessments and ICF (fig.4) in this study, this conclusion is not that evident. It is obvious that mobility and self-care are core concepts for assessment of functioning and disability. But the overview shows great variety and a number of tools covering several items, even though this only represents 20 rehabilitation settings in one country. Over recent years occupational therapists have developed some assessment tools which cover other items in the dimension activity (36, 39, 40), and so have other health care professions (42).

The concept of functioning is so comprehensive that assessment tools developed to cover certain items under the components are needed. A lot already exist and it is important to evaluate the compatibility between these and the ICF. Tools need to be sensitive to working conditions, because users will tailor forms, schedules and so forth to their needs. Usability is a key to understanding this.

Occupational Therapy

It should be asked as to why half of the participants were occupational therapists (O.T.). The snowball sampling could have cut out some potential participants, but as the ICIDH-2

network was used as source, it is more likely that this is a picture of reality. The occupational therapists seemed to have used the classification more comprehensively (table 1). Compared to what can be found in literature, there is evidently a great interest in the ICDH-2/ICF amongst occupational therapists (6, 17-22). The long period of change of paradigm in the profession (23), which has meant the growing importance of human occupation as a core concept (24), has without doubt had great effect on this interest. WHO's presentation of the Interactive Model, where the components activity and participation mean more focus on the social dimension of functioning, gives new possibilities for communication about the importance of human occupation. Furthermore, contextual factors are included as entities to be considered when describing the functioning of an individual. It gives the chance to bring up individual aspects, where personal factors and living conditions influence the quality of life. Especially with the increasingly older population, the quality of life has become an important issue and through that, attention has been focused on social participation (47).

It also brings up new discussions about core concepts, perhaps especially in Scandinavia, where human occupation and human activity more or less cover the same O.T. concept. Human occupation will always imply meaning and acting with a conscious purpose and therefore not all items in "Activities and Participation" could be understood as human occupation, e.g. changing and maintaining body position.

CONCLUSION AND PERSPECTIVES:

The research was carried out in rehabilitation, because the area often involves complicated issues that place great demands on thorough cross-professional and cross-sectorial cooperation. ICF has been developed to meet the need for a common language – and that is how the participants have used the ICF. Those who were the most active in this study are occupational therapists. The explanation could be found in the profession's terminology, which matches that of the ICF well.

In any case, there is a need for further development, if the implementation of the ICF as a general model and classification is going to be a success. It is important to take the user aspect into consideration as well as broad information for all health care professionals. It is necessary to consider how to handle the experience of a complicated, ambiguous structure that creates doubts about the use. The classification has been developed to meet several needs, and guidance for the use at different levels would be of great value. Disadvantages should be

examined, and might need more detailed research than this study could carry out. The compatibility between assessment tools and the ICF should be evaluated.

This research identifies the need for development of the ICF and supports the national and international debate about this. Corresponding research in Norway and Sweden, as planned, will be interesting. The population should be narrowed down to consist of health care professionals in clinical rehabilitation practice and the questionnaire should be revised

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REFERENCES

1. WHO: ICF International Classification and Functioning, Disability and Health. Geneva: WHO, 2001.
2. Bickenbach J E, Chatterji S, Badley E M, Üstün T B. Models of disablement, universalism and the international classification of impairments, disabilities and handicaps. *Social Science and Medicine*. 1999; 48: 1173-87.
3. Bredland E, Linge O, Vik K. Det handler om verdighet. 2nd ed. Oslo: Universitetsforlaget; 2002
4. WHO: ICIDH-2 International Classification of Functioning and Disability. Geneva: WHO, 1999.
5. Heerkens Y F, Hirs W M, de Klein-de Vrankrijker M W, van Ravensberg C D, Napel H T (ed). Newsletter ICIDH. Bilthoven: WHO Collaborating Centre for the ICIDH in the Netherlands. 2000; 3 (3):10
6. Dahl, T; Vik, K: Is ICIDH-2 Important and Useful for Occupational Therapy and Occupational Therapists? Copenhagen: Ergoterapeutforeningen; 2000.
Available from: www.etf.dk/ergoterapeuter/forsideartikler/tora_dahl_eng.htm
7. Bowker G, Star S L: Sorting Things Out. Cambridge, Massachusetts: The MIT Press; 1999. p. 1-194.
8. Bowker G: The Kindness of Strangers: Kinds and Politics in Classificatory Systems. In: Bowker G, Star S L, editors: How Classifications Works: Problems and Challenges in an Electronic World. *Library Trends*. 1998; 47 (2): 255-92.
9. Heerkens Y F, Hirs W M, de Klein-de Vrankrijker M W, van Ravensberg C D, Napel H T (ed). Newsletter ICIDH. Bilthoven: WHO Collaborating Centre for the ICIDH in the Netherlands. 2001; 4 (2)
10. Sundhedsministeriet redegørelse 1994: Samarbejde om Sundhed 1994-97. Copenhagen: Sundhedsministeriet; 1994.
11. Runge U: Sundhedsfremme og sygdomsforebyggelse – en ergoterapeutisk udfordring. *Ergoterapeuten*. 1997; 58 (17): 10-16
12. United Nations: World programme of Action concerning Disabled Persons. New York: United Nations; 1993.
13. Miller J (project manager): Development of Rehabilitation Standards in Canada. Pilot Project Report. Ottawa: Canadian Institute for Health Information; 1999.
14. Thorsen T; Mäkelä M (ed.). Changing Professional Practice. Theory and Practice of Guidelines Implementation. Copenhagen: Danish Institute for Health Services Research and Development; 1999.
15. Kaasgaard K. Brugervenlighedens mange ansigter - om design af værdifulde computersystemer. *LOKE* 2000; 18 (4): 2-5.
16. Nielsen J. Usability Engineering. London: Academic Press; 1993.
17. Hasselkus B. Reaching Consensus. *Am J Occ Ther* 2000; 54 (2): 127-8
18. AOTA. The ICIDH-2: A New Language in Support of Enablement. *Am J Occ Ther* 2000; 54 (2): 223-5
19. Trombly C. Occupational Therapy for Physical Dysfunction. Baltimore: Williams and Wilkins; 2002: p.1-15.
20. Law M, Borum C, Duin W. Measuring Occupational Performance. Slack Inc. 2001: p. 3-19
21. Ness N E. Helse gjennom aktivitet. Oslo: NETF; 1999.
22. COTEC. Newsletter, September 2000. Copenhagen: Ergoterapeutforeningen; 2000.
23. Mattingly C, Fleming M. Clinical Reasoning. Forms of Inquiry in a Therapeutic Practice. Philadelphia: F.A.Davies Company; 1993.
24. Kielhofner G. Conceptual Foundations of Occupational Therapy. 2nd ed. Philadelphia: F.A.Davies Company; 1997: p.53-94.
25. Trombly C. Occupation. Purposefulness and meaningfulness as Therapeutic Mechanisms. *Am J Occup Ther* 1995; 49 (10): 960-72
26. Depoy E, Gitlin L. Introduction to Research. 2nd ed. St. Louis: Mosby; 1998

27. Johansen K. Grundlaget for Kliniske Beslutninger. Copenhagen: Nyt Nordisk Forlag Arnold Busck; 1998
28. Oppenheim A N. Questionnaire Design, Interviewing and Attitude Measurement. 2nd ed. London: Continuum; 1992
29. Hellevik O. Forskningsmetode i sociologi og statsvidenskab. Oslo, Universitetsforlaget, 1999: p. 171-194
30. WHO. ICIDH-2: International Klassifikation af Funktionsevne og Funktionsevnenedsættelse. Beta-2 udkast. Copenhagen: Sundhedsstyrelsen; 2000.
31. WHO: ICIDH-2 Beta-2 Field Trial Studies, study 2. Geneva: WHO; 1999.
32. Law M, Letts L. A Critical Review of Scales of Activities of Daily Living. Am J Occup Ther, 1989; 43 (8): 522-8.
33. Roxendal G, Nordwall V. Tre BAS-skalar. Body Awareness Scale (BAS). BAS-hälsa. Intervjuskal för Kroppsjaget (ISK). Lund: Studentlitteratur; 1997
34. McKenzie R. The Lumbar Spine. Mechanical Diagnosis and Therapy. Waikanae, N.Z: Spinal Publications; 1998
35. Sørensen L. Cognitive Sensibilitet og ADL Undersøgelser. Copenhagen: Ergoterapeutforeningen; 1989
36. Arnadottir G. The Brain and Behavior: Assessing Cortical dysfunction through Activities of Daily Living. St. Louis: C V Mosby Company; 1990.
37. Pedersen I S, Jensen B S. Vejledning i brug af FIM, Functional Independence Measure. Hornbæk: Fysiurgisk Hospital; 1996
38. Mahoney F, Barthel D. Functional Evaluation: The Barthel Index. Maryland State Medical Journal. 1965, Annual Meeting April 21., 22., 23.
39. Sonn U, Törnqvist K. ADL-Taxonomi. Analys av ADL-förmåga. Manual. Nacka: FSA; 1993.
40. Fischer A: The Assessment of Motor and Process Skills. Fort Collins, CO: Three Star Press 1995.
41. Law M, Baptiste S, Carswell-Opzoomer A, McColl M, Polatajko H, Pollock N. Canadian Occupational Performance Measure. Toronto: CAOT Publications ACE; 1991.
42. Andreassen A, Aagaard C. Funktionelle Kommunikations Færdigheder. Hillerød: Kommunikationscentret i Frederiksborg Amt; 1999.
43. Høyem A. ICIDH-2 som struktur for tverrfaglig samarbeid. Rehabiliteringsmagasinet BRIS, november 2000: 1-7. Available from: http://www.delta.oslo.no/bris/2_00/icidh.html
44. Sundhedsministeriet. Fra patient til aktiv bruger. In: Sundhedssektoren – Status og fremtidsperspektiver. Copenhagen: 1999; Available from: <http://www.sum.dk/publika/status/kap7.htm>
45. Driessen MJ, Dekker J, Lankhorst GJ, van der Zee J. Inter-rater and Intra-rater Reliability of the Occupational Therapy Diagnosis. The Occupational Therapy Journal of Research 1995; 15 (4): 259-74.
46. Haley S M, Langmuir L. Perspectives from the field. How do current post-acute functional assessments compare with the activity dimension of the International Classification of Functioning and disability (ICIDH-2)? J rehabil outcomes meas 2000; 4 (4): 51-6
47. Avlund K. Active Life in Old Age. Danish Medical Bulletin 1999; 46 (4): 345-49