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ORIGINAL REPORT

THE ICF FORMS A USEFUL FRAMEWORK FOR CLASSIFYING INDIVIDUAL PATIENT GOALS IN POST-ACUTE REHABILITATION

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Objective: **Timely goal setting in close collaboration with the patient is essential to successful rehabilitation. We therefore sought to identify goals of patients in early post-acute rehabilitation as predictors of improved functioning.**

Design: **We conducted a prospective multi-centre cohort study in 5 early post-acute rehabilitation facilities.**

Patients: **Patients with musculoskeletal, cardiopulmonary and neurological conditions were recruited between May 2005 and August 2008.**

Methods: **A semi-structured questionnaire was used to identify patient goals and to assess improvement in overall functioning. Patients' goals were coded according to the International Classification of Functioning, Disability and Health (ICF). By means of a mixed effects model we examined the association between goal attainment and improved functioning.**

Results: **A total of 116 patients gave 546 statements, of which 426 were linked to 74 ICF categories, which were assigned to the existing comprehensive post-acute ICF Core Sets. Improvements in walking, recreation and leisure, pain, and transfer were the most frequently reported goals. In multivariable analysis patients' goal attainment was not a predictor for improved overall functioning.**

Conclusion: **The ICF can be used to identify and structure patients' goals. Patients' perspective should be considered in the rehabilitation process.**

Key words: ICF; goals; advance care planning; cohort study; rehabilitation; outcome assessment; classification.

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INTRODUCTION

Timely goal setting on the advice of caregivers working in close consultation with patients is essential to rehabilitation success (1, 2). Wade (3) defines a rehabilitation goal as a "future state that is desired and/or expected", which might furthermore "refer to relative changes or to an absolute achievement" (p. 273). In this context, a goal comprises not only the patients' aspirations, but also his or her environment, family, or any other involved persons. Involving the patients' perspective by identifying his or her personal needs and problems is considered to be a basic principle of the goal planning process (3).

Despite benefiting from a successful acute treatment, many patients with acute injury or disease experience a significant loss of functioning, and their recovery may not be complete in the short-term. Such persons, in particular those at risk of functional decline, are ideally managed by an interdisciplinary team at a specialized rehabilitation facility. Patients in such a setting will have a large spectrum of needs, desires or goals relevant to their rehabilitation. These goals may pertain to their particular health condition or disability, return to the home environment, activities of daily living, or emotional situation. Standardized measures, however, often fail to encompass the salient features of patients' goals (4). The need for involving the patients' personal perspective in the rehabilitation process has been noted previously (5, 6). It follows that the extent of goal attainment for an evaluation of the outcome is of interest in clinical practice (6). It has been observed that patients who had been prompted to formulate treatment goals participated more actively in the rehabilitation process and perceived themselves to manage better after completion of their post-acute rehabilitation (2).

Arguably, the actual attainment of patients' goals should be associated with improvement in overall functioning as subjectively perceived by the patient, and as objectively recorded by the health professional. However, there is no consensus on how to assess the patients' perspective systematically, nor is it obvious whether the attainment of stated goals really indicates improvement in measured outcomes (6, 7).

The International Classification of Functioning, Disability and Health (ICF) is a globally accepted language for communication about functioning, which entails consideration of body function, autonomy of the individual, and engagement in society (7, 8). In order to enhance the applicability of the ICF in clinical practice and research, and to overcome practical concerns relating to the great number of categories afforded within the ICF, the so-called comprehensive ICF Core Sets for patients in early post-acute rehabilitation facilities were created to provide standards for multi-professional compre-

hensive patient assessment (9–12). These Sets were designed to include the typical spectrum of problems in functioning encountered in post-acute rehabilitation, so as to permit the coding of patients' goals.

The objectives of this study were first to use the ICF to identify the rehabilitation goals of patients in early post-acute rehabilitation, and then to examine the association of goal attainment as reported by the patient with objective measures of improvement in overall functioning. Patient goals in this study were not set as part of the routine rehabilitation process but reflected expectations, desires, hopes, and goals, as well as fears, doubts or problems arising from the underlying health condition, the hospitalization, or in association with the physical and social environment.

METHODS

Study design

The design was a prospective multi-centre cohort study, which was conducted from May 2005 to August 2008. We recruited rehabilitation patients with musculoskeletal, cardiopulmonary and neurological conditions from predefined wards of 5 early post-acute rehabilitation facilities in Germany: the University Hospital Munich, Department of Physical and Rehabilitation Medicine (PRM); the General Hospital Munich-Schwabing, Department of PRM, Munich, Hospital of Nuremberg, Department and Institute for PRM, and Hospital of Ingolstadt, Institute for PRM.

Patients were included if they were at least 18 years old and were receiving rehabilitation interventions. Informed consent was obtained from patients, or, if the patient was unable to make an informed decision, from the patients' care-giver. Affirmation of the institutional ethics committees from each involved hospital was obtained prior to starting the study.

Measures

In addition to socio-demographic data and main diagnoses, the case report included a semi-structured questionnaire for patient and health professional, designed to identify patient goals and to assess overall functioning from the health professional's perspectives. To describe an overall view of functioning, health professionals were asked to appraise the limitations in overall functioning using a horizontal visual analogue scale, ranging from zero, for complete limitation in all aspects of functioning to 10, for no limitation in functioning. "Overall functioning" was defined as encompassing all aspects of physical or mental state, of daily living, mobility and interaction with the environment and with others. Health professionals were asked to relate to the current health condition and the present state. Generally, functioning was appraised as a part of the regular team conferences. Rating at end-point was also blinded to the admission rating. The data were collected by interview approximately 24 h after admission (baseline), and within 36 h before discharge (end-point).

Patients were asked at baseline to report up to 10 important aspects related to their health condition and their hospitalization. These aspects were expectations, desires, hopes, and goals, as well as fears, doubts or problems arising from the underlying health condition, the hospitalization, or in association with the physical and social environment. In addition, patients were reminded of these aspects at end-point and were asked to decide which of the goals mentioned at baseline had been attained during the inpatient stay. Reporting the goals was not part of the routine rehabilitation management, thus goals were not necessarily specific, measurable, achievable, realistic, and timed (SMART) as proposed for the assessment of rehabilitation goal attainment.

Linking process

Patients' statements were translated into the ICF terminology following a standardized linking procedure, which is based on established linking rules (13, 14). We used the framework of the ICF to specify and group the information derived from the patients, so as to enable subsequent statistical analysis.

In the first step of the linking procedure, two researchers independently identified all meaningful concepts contained in the patients' statements. A meaningful concept can be described as a specific component of text, consisting either of a few words or a few sentences, which have a common motif (15). In the second step, the two researchers' versions of the concepts identified as being meaningful were compared. Structured discussion and informed decision of a third expert were used to resolve disagreements between the two versions. Then the final consensus version of meaningful concepts was linked to the most closely corresponding ICF categories by the two independent researchers, according to the defined linking rules. The results of the two experts were again compared; in the event of disagreement, structured discussion and consultation with a third expert was again used to arrive at a decision. In cases where a patients' goal could not be linked to the ICF, e.g. because the statement was too general for linking, or if the contents were not covered by the ICF, we summarized and grouped the data so as not to lose that information and to enable subsequent analysis.

Data analysis

We used absolute and relative frequencies to describe patients' goals. Based on the statements on goal attainment at discharge, we made a binary classification of the individuals (0 = no goal attained, 1 = at least one goal attained).

To analyse associations between goal attainment and functional recovery we used mixed effect regression models, including both fixed and random effects. This method of analysing longitudinal data is well-suited to examine change trajectories with unequally spaced data (16), as typically occurs in patient goal analysis. It supposes that the continuous outcome (such as the patients' overall functioning assessed by a numerical rating scale) occurs as a function of time for each individual, known as the growth trajectory, with an additional error term. The growth trajectory is described by a number of parameters; the intercept describes the individual starting level, i.e. patient functioning at admission, whereas the slope parameter represents the rate of change over time, i.e. the change of functioning between admission and discharge (17). We calculated an unadjusted model and a model adjusted for age, sex and condition group.

Goodness of fit of the models was assessed by comparing their Akaike Information Criterion (AIC = Deviation + 2 × (number of parameters in the model – degrees of freedom (df)). Fixed effects were tested for significance using the z-statistic, all tests being 2-tailed with a p-value ≤ 0.05 deemed to indicate statistical significance.

RESULTS

A total of 116 patients were included, 52 (45%) with musculoskeletal, 58 (50%) with neurological and 6 (5%) with cardiopulmonary conditions. Forty-seven (40%) patients were female, mean age at admission was 64 years (standard deviation (SD) = 14 years), mean length of stay 34 days (SD = 19 days). Demographic characteristics and assessment of overall functioning are summarized in Table I.

Patients reported a total of 546 goals. A total of 120 goals could not be linked to second-level categories of the ICF, mainly because they were overly broad, with improvement of general health condition or autonomy being a typical instance. Twenty-six statements were linked to ICF components (1 to

Table I. *Patient characteristics*

	Total (n=116) n (%)	Musculoskeletal conditions (n=52) n (%)	Neurological conditions (n=58) n (%)	Cardiopulmonary conditions (n=6) n (%)
Female	47 (40.5)	27 (51.9)	18 (31.0)	2 (33.3)
Diseases of the respiratory system (J00-J99)	1 (0.9)	0 (0)	1 (1.7)	0 (0)
Diseases of the circulatory system other than cerebrovascular diseases (I00-I52 and I70-I99)	9 (7.8)	4 (7.7)	2 (3.4)	3 (50)
Cerebrovascular diseases (I60-I69)	18 (15.5)	0 (0)	18 (31)	0 (0)
Diseases of the nervous system (G00-G99)	25 (21.6)	3 (5.8)	22 (37.9)	0 (0)
Diseases of the musculoskeletal system and connective tissue (M00-M99)	24 (20.7)	13 (25)	10 (17.2)	1 (16.7)
Injury (S00-T98)	19 (16.4)	19 (36.5)	0 (0)	0 (0)
Neoplasms (C00-D48)	6 (5.2)	3 (5.8)	2 (3.4)	1 (16.7)
Symptoms (R00-R99)	1 (0.9)	0 (0)	1 (1.7)	0 (0)
Other diagnoses	13 (11.2)	10 (19.2)	2 (3.4)	1 (16.7)
Age at admission, years	64.1 (14.1)	64.7 (13.6)	63.5 (15.1)	65.4 (7.7)
Length of stay, days	34.1 (18.9)	31.8 (17.8)	35.9 (20.5)	36.2 (11.9)

the component Body Functions and 25 to the Component Activities and Participation) and 68 to ICF chapters (18 to chapters of the component Body Functions, 38 to chapters of the component Activities and Participation and 12 to chapters of the component Environmental Factors). In all, 426 goals could be coded as second-level ICF categories, with the most frequently stated goals being Walking (d450), Recreation and leisure (d920), Sensation of pain (b280), and Changing basic body position (d410).

Of the 174 goals reported by patients with musculoskeletal conditions, 119 (68%) could be coded by categories covered in the comprehensive ICF Core Set for patients with musculoskeletal conditions in early post-acute rehabilitation facilities. Of the 217 goals reported by patients with neurological conditions, 196 (90%) could be coded by categories covered in the corresponding comprehensive ICF Core Set. Of the 35 goals reported by patients with cardiopulmonary conditions, 25 (71%) could be coded by categories covered in the corresponding comprehensive ICF Core Set. Details on frequencies of linked ICF categories are shown in Table II. Recreation and leisure (d920) was the most frequently coded category not contained in 1 of the 3 ICF Core Sets. Most of the other categories not contained were reported only once.

A total of 110 patients (50 with musculoskeletal, 54 with neurological and 6 with cardiopulmonary conditions) gave information on goal attainment. Ninety-three patients (84.6%) had attained at least one of their personal goals. Mean overall functioning score was 3 (SD=2) at admission and 6 (SD=2) at discharge.

The unadjusted mixed effect regression model showed a positive association between goal attainment and functional recovery, with an estimated difference in daily rate of change of 0.03 points. This association was not statistically significant (p=0.1003). The mixed effect regression model adjusted for age, sex and condition group showed a statistically significant difference in initial functioning among condition groups and according to age. Patients with neurological conditions and older patients started on average with a lower score than did the other two groups. There was a positive association between goal attainment and functional recovery, with an estimated daily rate of change of 0.03 points. This association was not significant at the 0.05 level (p=0.0775). Table III shows details of the regression models.

DISCUSSION

In this study, patients undergoing early post-acute rehabilitation reported mobility, namely transfer and walking, getting rid of pain, returning home and improving their general health condition as their main goals of the rehabilitation process. Goal areas could be standardized and analysed in a meaningful way

Table II. *Absolute and relative frequencies of 2nd level International Classification of Functioning, Disability and Health (ICF) categories linked to patient goals*

ICF Code	Description	Musculoskeletal conditions (n=174) n (%)	Neurological conditions (n=217) n (%)	Cardiopulmonary conditions (n=35) n (%)
b130	Energy and drive functions			2 (5.7)
b152	Emotional functions	8 (4.6)		
b280	Sensation of pain	19 (10.9)		4 (11.4)
d330	Speaking			2 (5.7)[a]
d410	Changing basic body position		21 (9.7)	
d415	Maintaining a body position		12 (5.5)	3 (8.6)
d450	Walking	16 (9.2)	13 (6.0)	4 (11.4)
d510	Washing oneself		10 (4.6)	
d550	Eating		14 (6.5)	
d920	Recreation and leisure	22 (12.6)†		2 (5.7)†
e115	Products and technology for personal use in daily living			3 (8.6)

[a]ICF category not included in ICF Comprehensive Core Set.
Only categories with a frequency ≥ 5% are reported.

Table III. *Mixed effects models on associations between goal attainment and functioning*

	Unadjusted model		Model adjusted for age, sex and condition group	
	Estimate	*p*-value	Estimate	*p*-value
A. Associations with functioning at admission				
Goal attainment (yes vs no)	1.0567	0.0236	0.5818	0.1829
Sex (male vs female)			–0.3328	0.2994
Age (in years)			–0.0233	0.0334
Condition group (reference = musculoskeletal)				0.001
Neurological			–1.263	
Cardiopulmonary			–0.7101	
B. Associations with daily rate of change in functioning				
Goal attainment (yes vs no)	0.0281	0.1003	0.0315	0.0775
Sex (male vs female)			0.0045	0.699
Age (in years)			–0.00003	0.93
Condition group (reference = musculoskeletal)				0.7444
Neurological			0.0021	
Cardiopulmonary			0.0185	
Goodness of fit (AIC)	902		896.9	

Estimates give mean differences in functioning as appraised by health professionals (A, on a 0–10 scale, where 0 signifies worst and 10 signifies best) between groups at admission and mean differences in functioning over time per day (B). To give an example, the negative estimate for a person with a neurological condition indicates that someone with this characteristic would have a lower score at admission than someone with a musculoskeletal condition.
AIC: Akaike Information Criterion.

by using the ICF. Goal attainment as a result of the rehabilitation process, however, was not statistically associated with improvement in patients' overall functioning.

Goal attainment scaling in rehabilitation has been shown to be more responsive than conventional summary scores; equally, individualized priority "personal" rehabilitation goals have been mapped to the ICF (18). Our approach has been slightly different, insofar as we did use goals that were set by the patients as the most important and relevant to them, but the goals were not part of the treatment and were not discussed and negotiated with the patients.

Most frequently, goals could be coded with ICF categories from the component Activities and Participation, namely from the chapters Mobility and Self-care. The reported goals reflect a typical spectrum of needs and goals expressed by patients in the rehabilitation situation (1). Regardless of the underlying health condition, walking was one of the more prominent goals.

More than 90% of all patient goals could be linked to the ICF, which supports the general utility of the Core Sets in the context of rehabilitation. However, 94 reported goals were insufficiently specific, and could therefore only be coded on a component or chapter level. Since goal setting in rehabilitation is arguably an interactive process between patient and therapist (19), an appropriate role of the therapist is to prompt a specification of the goal. To give an example, a statement such as "I want to be able to manage my day-to-day life" can be broken down into several smaller and more specific components, such as functioning with respect to household activities, running errands, or using public transportation. In a goal attainment approach, the therapist typically ensures that the goals stated at the initiation of rehabilitation correspond to the patients' values and that those goals can realistically be met through appropriate therapeutic interventions (20). In previous studies we have likewise seen that goals of physiotherapy interventions (21) and goals of nursing interventions (22) can be coded using the ICF.

Overall, we found in our study that the comprehensive ICF Core Sets reflect the patients' perspective, namely their goals. Nevertheless, a total of 27 reported categories proved not to be contained in the ICF Core Sets. Of these, Recreation and leisure (d920) was the most frequently coded category. While one might suppose that leisure activities are not the major issue for a patient at the beginning of rehabilitation, this goal is nonetheless to be respected as a motivational objective and should be reconsidered for the ICF Core Sets. Most of the other categories not contained in the comprehensive ICF Core Sets were reported only once, and were thus hardly representative.

Our results for patients in German rehabilitation clinics are in agreement with findings of an international study, which concluded that initial stating of goals can be a valid tool in rehabilitation, by directing patients' attention to the therapy process and increasing their motivation to participate actively (23). Our study showed a tendency towards an association between goal achievement and objective improvement of overall functioning, as assessed by health professionals. In an earlier study of neurological rehabilitation, goal attainment was likewise shown to be associated with improvements in functioning (24). This association indicates that health professionals' criteria for judging overall functioning are largely consistent with what their patients consider to be important aspects of their functional recovery (25). Our study failed to show statistical significance on the 5% level. This may be due to the small sample size or the small difference in clinically perceived difference in functioning.

Several limitations of this study merit comment. Firstly, it has to be acknowledged that the group of patients with cardiopulmonary conditions was too small to provide any generalizable results. Further research has to be carried out to make sure that this group is properly represented. Also, because more detailed analysis was uninformative, patients were categorized into only two groups (no goals attained vs at least one goal attained) without differentiating between those who attained all of their major goals and those who attained only one of their minor goals. This might have blurred the association between goal attainment and improvement in functioning. It might be advisable in future studies to ask patients to define one or two major goals or to identify several statements that are most important to them. Interpretability of the results might also have been improved by asking patients to be more specific in defining their rehabilitation goals and by ensuring that goals are always formulated in a structured process and in close cooperation between patient and therapist,

as noted previously (2). Moreover, patients were not asked about measurable, realistic goals, but rather were asked to report the 10 most relevant aspects of functioning pertaining to their disease and hospitalization. Nevertheless, these 10 aspects were generally reflective of patients' personal desires and expectations concerning their disease or injury, and their hospitalization, such that we feel justified in considering these aspects to be synonymous with "goals" (3). Asking patients about goal attainment in the course of treatment may be subjected to response shift and thus be another limitation of this study. Response shift refers to changes in internal standards, values or concepts of patients with severe illness (26) and may result in a change in one's self-evaluation of the target construct. There is, nevertheless, a difference between evaluation of a construct and evaluation of goal attainment. Thus, a patient who had reported improving her mobility as an issue of perceived relevance at baseline might have experienced a shift in meaning that attributed less importance to mobility. Still, she would report whether any improvement had taken place.

We found the ICF to be a useful framework to identify and structure patients' statements about their goals in early post-acute rehabilitation. Walking, transfer, alleviation of pain, regaining autonomy, returning home and improvement of the general condition emerged as the most important and most frequently reported aspects from the patient perspective. The positive association between goal attainment and improved functioning underlines that it is essential to involve the patient in the rehabilitation planning process, with an aim of obtaining an optimal outcome.

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REFERENCES

1. Siegert RJ, Taylor WJ. Theoretical aspects of goal-setting and motivation in rehabilitation. Disabil Rehabil 2004; 26: 1–8.
2. Wressle E, Eeg-Olofsson AM, Marcusson J, Henriksson C. Improved client participation in the rehabilitation process using a client-centred goal formulation structure. J Rehabil Med 2002; 34: 5–11.
3. Wade DT. Evidence relating to goal planning in rehabilitation. Clin Rehabil 1998; 12: 273–275.
4. Grenville J, Lyne P. Patient-centred evaluation and rehabilitative care. J Adv Nurs 1995; 22: 965–972.
5. McPherson KM, Brander P, Taylor WJ, McNaughton HK. Living with arthritis – what is important? Disabil Rehabil 2001; 23: 706–721.
6. Liu KP, Chan CC, Chan F. Would discussion on patients' needs add value to the rehabilitation process? Int J Rehabil Res 2005; 28: 1–7.
7. Stucki G, Ustun TB, Melvin J. Applying the ICF for the acute hospital and early post-acute rehabilitation facilities. Disabil Rehabil 2005; 27: 349–352.
8. World Health Organization. International Classification of Functioning, Disability and Health. Geneva: WHO; 2001.
9. Grill E, Ewert T, Chatterji S, Kostanjsek N, Stucki G. ICF Core Set development for the acute hospital and early post-acute rehabilitation facilities. Disabil Rehabil 2005; 27: 61–366.
10. Scheuringer M, Stucki G, Brach M, Huber EO, Schwarzkopf SR, Kostanjsek N, et al. ICF Core Set for patients with musculoskeletal conditions in early post-acute rehabilitation facilities. Disabil Rehabil 2005; 27: 405–410.
11. Stier-Jarmer M, Grill E, Ewert T, Bartholomeyczik S, Finger M, Mokrusch T, et al. ICF Core Set for patients with neurological conditions in early post-acute rehabilitation facilities. Disabil Rehabil 2005; 27: 389–395.
12. Wildner M, Quittan M, Portenier L, Wilke S, Boldt C, Stucki G, et al. ICF Core Set for patients with cardiopulmonary conditions in early post-acute rehabilitation facilities. Disabil Rehabil 2005; 27: 397–404.
13. Cieza A, Geyh S, Chatterji S, Kostanjsek N, Ustun B, Stucki G. ICF linking rules: an update based on lessons learned. J Rehabil Med 2005; 37: 212–218.
14. Cieza A, Brockow T, Ewert T, Amman E, Kollerits B, Chatterji S, et al. Linking health-status measurements to the international classification of functioning, disability and health. J Rehabil Med 2002; 34: 205–210.
15. Karlsson G. Psychological qualitative research from a phenomenological perspective. Stockholm: Almquist & Wiksell International; 1995.
16. Singer JD, Willett JB. Applied longitudinal data analysis. New York: Oxford University Press; 2003.
17. Rogosa D, Brandt D, Zimowski M. A growth curve approach to the measurement of change. Psychol Bull 1982; 92: 726–748.
18. Turner-Stokes L, Williams H, Johnson J. Goal attainment scaling: does it provide added value as a person-centred measure for evaluation of outcome in neurorehabilitation following acquired brain injury? J Rehabil Med 2009; 41: 528–535.
19. Bergquist TF, Jacket MP. Awareness and goal setting with the traumatically brain injured. Brain Inj 1993; 7: 275–282.
20. Reid A, Chesson R. Goal attainment scaling. Is it appropriate for stroke patients and their physiotherapists? Physiotherapy 1998; 84: 136–144.
21. Mittrach R, Grill E, Bonjean M, Scheuringer M, Boldt C, Huber EO, et al. Goals of physiotherapy interventions can be described by using the International Classification of Functioning, Disability and Health (ICF). Physiotherapy 2008; 94: 115–157.
22. Mueller M, Boldt C, Grill E, Strobl R, Stucki G. Identification of ICF categories relevant for nursing in the situation of acute and early post-acute rehabilitation. BMC Nurs 2008; 7: 3.
23. Hurn J, Kneebone I, Cropley M. Goal setting as an outcome measure: a systematic review. Clin Rehabil 2006; 20: 756–772.
24. McMillan TM, Sparkes C. Goal planning and neurorehabilitation: The Wolfson Neurorehabilitation Centre Approach. Neuropsychol Rehabil 1999; 9: 241–251.
25. Ponte-Allan M, Giles GM. Goal setting and functional outcomes in rehabilitation. Am J Occup Ther 1999; 53: 646–649.
26. Sprangers MAG, Schwartz CE. Integrating response shift into health-related quality of life research: a theoretical model. Soc Sci Med 1999; 48: 1507.