

ICFに基づく包括的かつ実用的な 生活機能評価システムの構築

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分類としてのICF



- ・障害に関わる項目が全部で1454項目
- ・心身機能、身体構造、活動と参加、環境因子の各パートからなる

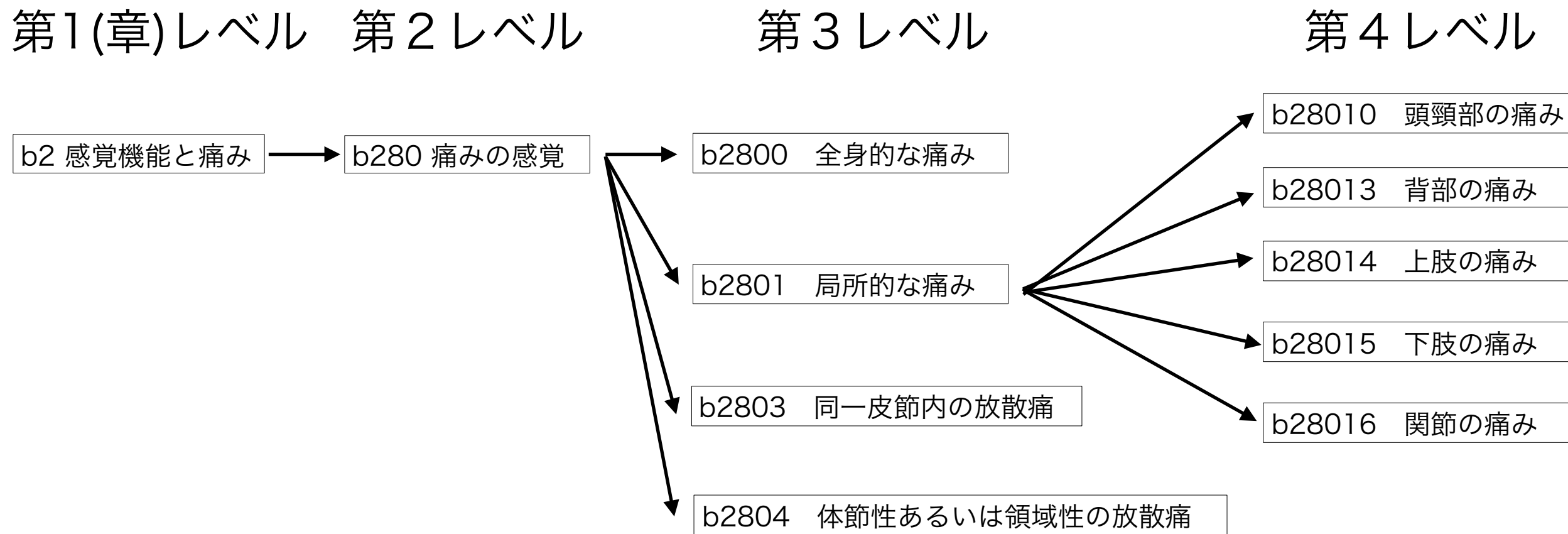
ICFを臨床で用いるメリット

- 従来のADL評価以上に広い範囲を対象として生活機能の評価が可能である
- WHOによる国際分類であり、国際比較への使用や、国際共同研究との連携がしやすい
- 標準化した評価により、ベンチマーク形成、さらには治療のクオリティ・マネジメントへの応用が可能となる

ICFを臨床で用いる上での問題点

- 分類の多さ
- 項目と定義の複雑さ
- 検者間信頼性

問題点：分類の多さ



全部で1400項目以上あり、全てをつけるのは不可能

→ **ICFコアセットの利用**

ICFコアセット

これまでに30以上のコアセット
が発表されている

脳卒中コアセット
脊髄損傷コアセット

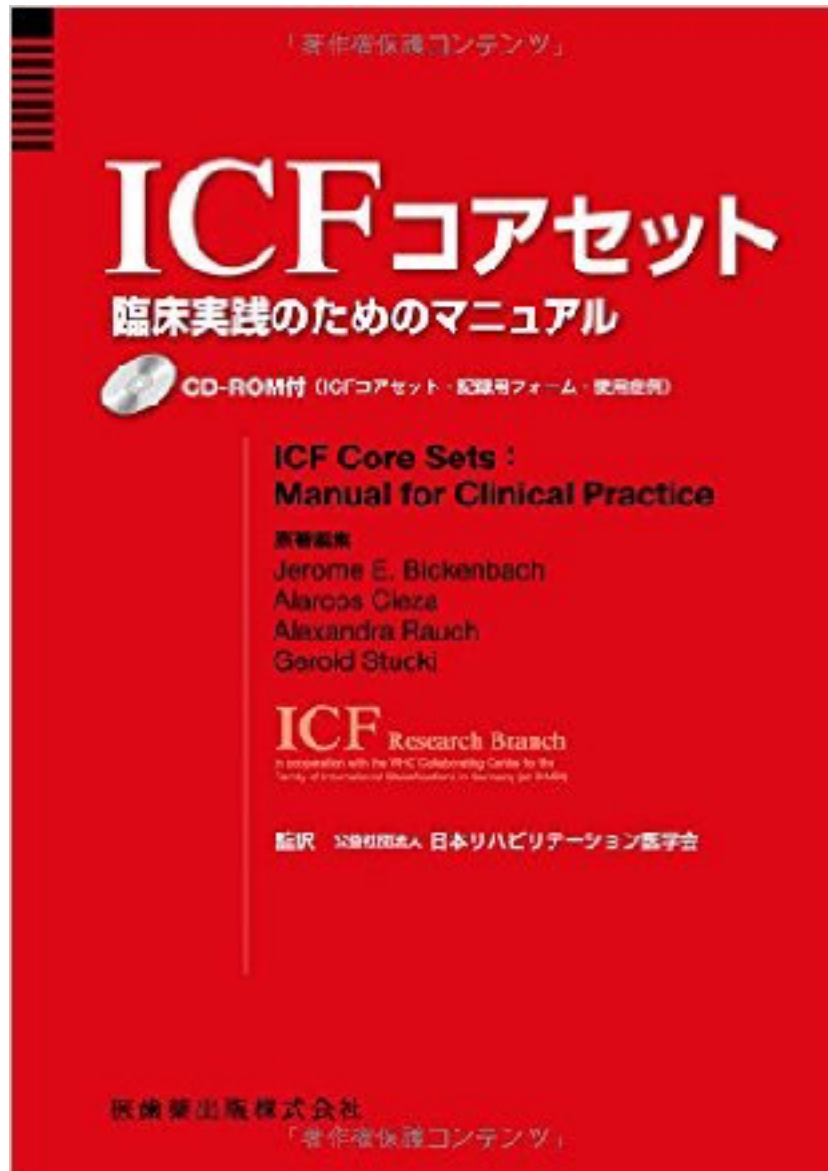
COPDコアセット

糖尿病コアセット

関節症コアセット

関節リウマチコアセット

-
-
-



リハビリテーションセット (Rehabilitation set)

- b130 活力と欲動の機能 *
- b134 睡眠機能
- b152 情動機能 *
- b280 痛みの感覚 *
- b455 運動耐容能
- b620 排尿機能
- b640 性機能
- b710 関節の可動性の機能
- b730 筋力の機能
- d230 日課の遂行 *
- d240 ストレスとその他の心理的要求への対処
- d410 基本的な姿勢の変換
- d415 姿勢の保持
- d420 移乗
- d450 歩行 *
- d455 移動 *
- d465 用具を用いての移動
- d470 交通機関や手段の利用
- d510 自分の体を洗うこと
- d520 身体各部の手入れ
- d530 排泄
- d540 更衣
- d550 食べること
- d570 健康に注意すること
- d640 調理以外の家事
- d660 他者への援助
- d710 基本的な対人関係
- d770 親密な関係
- d850 報酬を伴う仕事 *
- d920 レクリエーションとレジャー

Toward the International Classification of Functioning, Disability and Health (ICF) Rehabilitation Set: A Minimal Generic Set of Domains for Rehabilitation as a Health Strategy

Birgit Proding, PhD,^{a,b,c} Alarcos Cieza, PhD,^{c,d,e} Cornelia Oberhauser, PhD,^e Jerome Bickenbach, PhD,^{a,b,c} Tefvik Bedirhan Üstün, MD,^f Somnath Chatterji, MD,^g Gerold Stucki, MD^{a,b,c}

Archives of Physical Medicine and Rehabilitation 2016;97:875-84

Table 4 Overview of all ICF categories contained in the newly developed ICF Rehabilitation Set and the minimal set of EFS

ICF Category		Regression Methods	Expert Consultation
ICF Rehabilitation Set (cutoff: 50%)			
b130	Energy and drive functions (G)	✓	
b134	Sleep functions	✓	
b152	Emotional functions (G)	✓	
b280	Sensation of pain (G)	✓	
b455	Exercise tolerance functions	✓	✓
b620	Urination functions		✓
b640	Sexual functions	✓	
b710	Mobility of joint functions	✓	
b730	Muscle power functions	✓	
d230	Carrying out daily routine (G)	✓	
d240	Handling stress and other psychological demands	✓	✓
d410	Changing basic body position		✓
d415	Maintaining a body position		✓
d420	Transferring oneself		✓
d450	Walking (G)	✓	
d470	Using transportation	✓	
d455	Moving around (G)	✓	
d465	Moving around using equipment		✓
d510	Washing oneself	✓	✓
d520	Caring for body parts		✓
d530	Toileting		✓
d540	Dressing	✓	✓
d550	Eating		✓
d570	Looking after one's health	✓	
d640	Doing housework	✓	
d660	Assisting others	✓	
d710	Basic interpersonal interactions	✓	
d770	Intimate relationships	✓	
d850	Remunerative employment (G)		✓
d920	Recreation and leisure	✓	

- 一般セット(*)は全て含まれている。

問題点：項目と定義の複雑さ

項目によっては項目の名称や説明が臨床家に馴染みがないものがある

例：活力と欲動の機能

・ ・ ・ 個別的なニーズと全体的な目標を首尾一貫して達成させるような、生理的および心理的機序としての全般的な精神機能

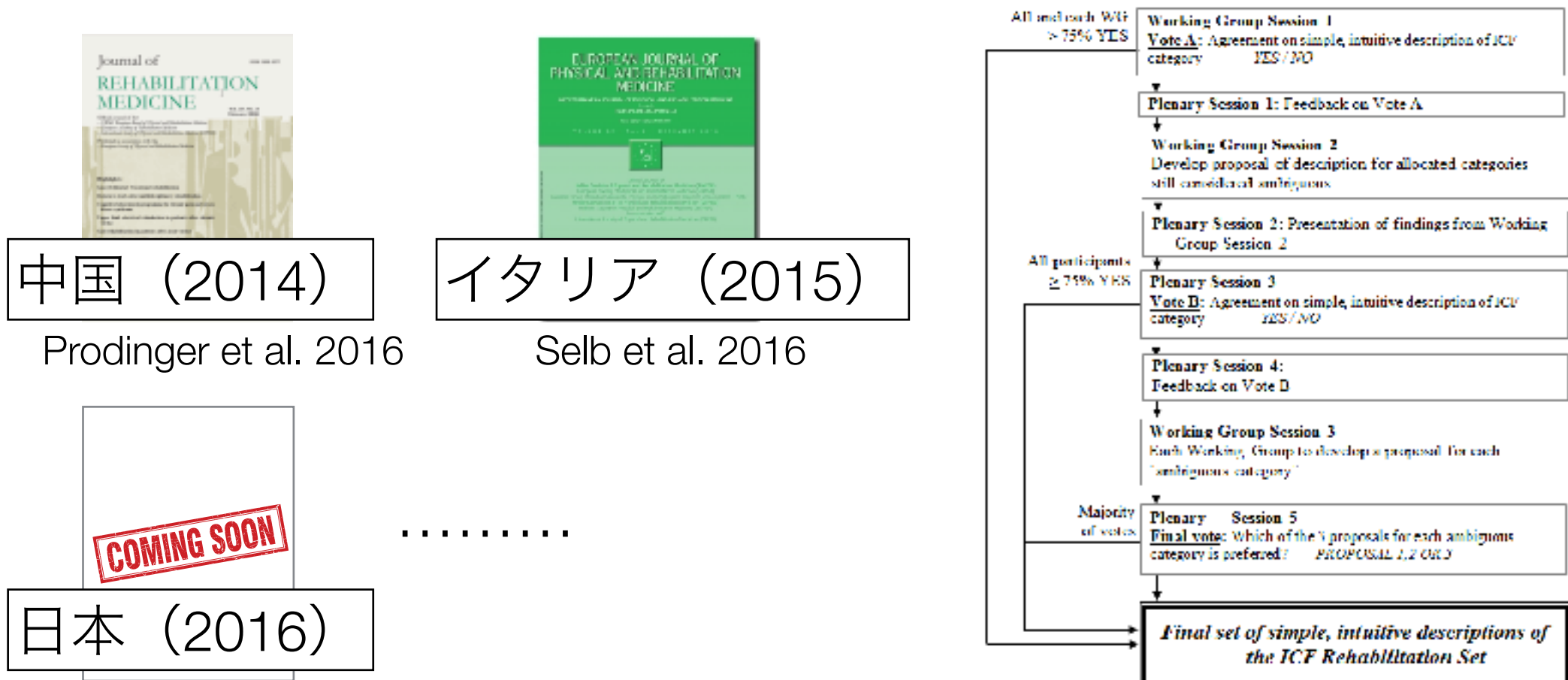
→ 簡潔で直感的な説明文の作成

簡潔で直感的な説明文の作成

- わかりにくいICFの定義に、臨床家にわかりやすい説明文をつけるプロジェクト
- 例：b134 情動機能

定義「こころの過程における感情的要素に関連する個別精神機能」

説明文「適切に感情をコントロールする機能」



問題点：検者間信頼性

評点ガイドライン (国際生活機能分類、付録2より)

0点 問題なし (0-4%)

1点 軽度の問題 (5-24%)

2点 中等度の問題 (25-49%)

3点 重度の問題 (50-95%)

4点 完全な問題 (96-100%)

8点 詳細不明

9点 非該当

- %が何を表すのか、詳細な記載はない
- シンプルでわかりやすい一方、低い検者間信頼性が報告されている
(Starrost et al. 2008, Uhlig et al. 2007, Hilfiger et al, 2009)
- 臨床スケールは医療者間の情報伝達に使われるため、このまま臨床評価として導入するのは容易ではない

→二つのアプローチを準備

Approach 1

採点・情報共有しやすい採点の仕組みの作成 (補助ツールの作成)

- 採点用リファレンスガイドの作成
- 環境因子の情報の付加

採点用リファレンスガイドの作成

- これまでにも評点の基準を作成する取り組みは数多くある
- ただし、恣意的な基準の作成は元々のガイドラインと矛盾を生じる
- 客観性を保持できるよう、認知デブリーフィングを用いた基準作成のプロセスを用意

作成プロセス

多職種 of 医療者
による採点 (共通の患者)

認知インタビュー

採点者によるディスカッション

ICF 専門家によるレビュー

リファレンスガイド

	Simple intuitive descriptions	What to score
0130	Energy and other functions Mental function to achieve a self-motivated life	Score according to how often and how much the patients have problems in driving the mentality to achieve a self-motivated life, such as motivations for daily tasks or appetite to keep their health. The extreme should be that they have no motivations nor no appetite everyday.
0134	Sleep functions Necessary and sufficient sleep	Score according to how often and how much the patients have problems in satisfying needs of sleep which is necessary and sufficient for them. The extreme should be that they cannot sleep at all everyday.
0132	Emotional functions Function to control emotion appropriately	Score according to how often and how much the patients have problems in controlling emotion appropriately, such as depression or irritability. The extreme should be that they completely lose the control of emotion everyday.
0280	Sensation of pain Existence of pain	Score according to how often and how much the patients have pain. The extreme should be that they have unbearable, intractable pain at any time.
0405	Exercise tolerance functions Physical fitness to bear daily physical activities	Score according to how often and how much problems the patients have in physical fitness to bear daily activities, such as fatigue and/or need of rest due to physical fitness. The extreme should be that they cannot bear any daily activity in daily living.
0520	Urination functions Function to discharge urination without disturbing daily life	Score according to how often and how much problems the patients have in urination functions such as polyuria, dysuria or incontinence. The extreme should be that they completely lose bladder control everyday.
0540	Sexual functions Mental and physical functions related to the sexual activity	Score according to how often and how much problems the patients have in sexual functions. The extreme should be that they have no mental or physical function for sexual activity at any time.
0710	Mobility of joint functions Range and ease of movement of joints	Score according to how often and how much problems the patients have in going problems. The extreme should be that all of their joints are completely fixed at any time.
0730	Muscle power functions Muscle functions that is necessary for daily life	Score according to how often and how much problems the patients have in muscle functions. The extreme should be that all of their muscles are completely incapable to move at any time.
0830	Carrying out daily routine Plan and do activities in daily life	* Requirement of support to plan and do regular and nonregular activities. * "Difficulty" includes the needs of support for concrete activities.
0840	Handling stress and other psychological demands Deal with stress and agitation due to tasks which entail responsibility demands	* "Difficulty" includes the need of support when dealing with stress and agitation to tasks which entail responsibility demands. * "Support" includes a kind of mental care by the others.
0910	Changing basic body positions Change body positions to standing, sitting, lying or squatting positions	* How well he/she can change body positions by himself and how much he/she need support
0915	Maintaining a body position Maintain posture, such as sitting and standing	* How well he/she can maintain body positions by himself and how much he/she need support
0920	Transferring oneself Transferring, for example from bed to wheel chair	* How well he/she can transfer by himself and how much he/she need support
0950	Walking Walking on flat ground (including outdoor and off road)	* How well he/she can walk indoors and outdoors by himself and how much he/she need support * "Difficulty" includes the absence of outdoor or offroad walking
0955	Moving around Move around other than flat ground walking, such as going up and down the stairs and running	* How well he/she can go up/down stairs and run by himself and how much he/she need support * Score the best performed in the way of moving around other than flat ground walking such as going up/down stairs and running.
0960	Moving around using assistive devices Move around using assistive devices such as wheel chairs and walkers	* How well he/she can move around flat ground without steps with assistive devices by himself and how much he/she need support * "Difficulty" includes the inability to get over small steps
0970	Using transportation Move around as a passenger, using various means of transportation	* How well he/she can use public buses, choose appropriate vehicle, ride/croft at a limited time by himself and how much he/she need support
0910	Washing oneself Clean, wipe and dry one's whole body or body parts	* How well he/she can clean, wipe and dry he/she whole body or body parts by himself and how much he/she need support
0920	Combing for body parts Combing for mouth, hair, beard, nails, skin, etc.	* How well he/she can comb he/she teeth, tidy up he/she hair, shave his face, cut nails, wash he/she face and dry it by himself and how much he/she need support
0930	Dressing Put on, take off, fasten, unfasten, and clear up without disturbing others	* How well he/she can do holding and clearing up by himself and how much he/she need support
0940	Choosing appropriate clothes according to climate and social conditions Put on and taking off appropriate clothes according to climate and social conditions	* If he/she can choose the appropriate clothes, how well he/she can put on and take off them by himself and how much he/she need support
0950	Eating Eat safely using required methods	* How well he/she can eat by himself including the choice of eatery and how much he/she need support (including adjusting tastes) * "Difficulty" includes the difficulty of eating
0970	Looking after one's health Do self-management to keep mental and physical health	* How much he/she does activities to maintain health such as management of food and exercise, acupuncture, etc. * "Support" includes advice or encouragement * "Support" includes the advice from others
0980	Doing housework Do housework (including cooking) required for one's daily life	* Whether he/she does housework such as cleaning, washing clothes and disposing garbage or not. If there is any limitation or not.
0990	Assisting in daily life of others Be involved in daily life of others and families	* Whether he/she assist others such as growing up children or take care of elderly or not. If there is any limitation or not.
0970	Basic interpersonal interactions Interact with people appropriately such as showing consideration and esteem, adjusting differences in opinions	* If he/she interact with people or not. If there is need for the others to care to interact or not. * "Partly supported" implies occasional support. "Fully supported" implies frequent support.
0970	Intimate relationships Creating and maintaining close relationships, such as between spouses, parents and children, etc.	* If he/she can create and maintain intimate relationship or not. If there is need for the others to care to create or keep the relationship or not.
0970	Remunerative employment Work to get remuneration	* If he/she can work or not. If there is need to find the work and/or to support or not. * "Partly supported" includes occasional or limited activities or not. "Fully supported" implies frequent support.
0990	Recreation and leisure activities Do recreational or leisure activities	* If he/she can do recreational or leisure activities or not. If there is need to find the contents and/or to support or not. * "Partly supported" implies limited support to do by a little activities.

検者間信頼性の検討中
weighted kappa 0.48~0.89

環境因子の情報の追加

- 臨床的には、環境因子として何が必要か、という情報が重要
- ツールとして環境因子の情報を追加して情報共有できる仕組みを準備

d450 歩行

装具装着下での歩行 → 1: 軽度の問題?

見守り下での歩行 → 1: 軽度の問題?

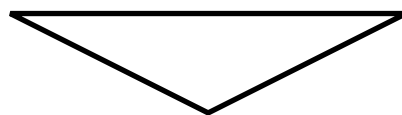
環境因子の情報の追加:

M (薬剤、食物) ... e110

D (装具等物品・装置の使用) ... e115/e120

B (建物構造) ... e155

H (人的介助) ... e3



装具装着下での歩行 → **1D**

見守り下での歩行 → **1H**

装具、見守り下での歩行 → **1DH**

コンピューターアプリケーションの作成

Windows 10

評価画面 ICF for Windows (操作版)

d510 自分の身体を洗うこと

保存 結果表示 保存して終了 一時保存 戻る 次へ

定義: 例え、入浴すること、シャワーを浴びること、手や足、顔、髪を洗うこと、タオルで拭き乾かすこと。

身体の部分および全体を洗い、拭き、乾かす

残り問題数
20 問

進捗

定義

何を評価するか

- ・洗う、拭き、乾かす動作を自分で行っているか、サポート下で行っているか

採点表

<input type="radio"/> 0.問題なし	問題なく自分で行っていることなど	<input type="radio"/> 4.完全な問題	完全なサポート下で行っていること、もしくは全く行えていないことなど
<input type="radio"/> 1.軽度の問題	自分で行っているが、装具や補助具、手すりを使用する、あるいは他者の見守り下で行っていることなど	<input type="radio"/> 8.詳細不明	詳細不明
<input checked="" type="radio"/> 2.中等度の問題	一部サポート下で行っていることなど	<input type="radio"/> 9.非該当	非該当
<input type="radio"/> 3.重度の問題	大部分をサポート下で行っていることなど		

環境因子 建物構造 装具・自助具等 人的支援 薬剤等

環境因子

評点のリファレンスガイド

簡潔で直感的な
説明文

定義

進捗

評点のリファレンスガイド

環境因子

Approach 1

採点しやすい仕組みの作成

(補助ツールの作成)

課題

- 評価範囲が既存のスケール（FIM等）と重複しており、普及には工夫が必要
- これをもって採点として良いかどうかについては議論が必要

Approach 2

既存のスケールを使った情報収集

- 臨床で用いられている既存のスケールを、ICFの項目に紐付けする
- 集めたデータを分布に基づいて標準化スケールにする

Linking rule

- 既存の評価スケール等をICFの項目にリンクするためのルール
- 最初に2002年(Cieza et al, J Rehabil Med)に発表され、2005年 (Cieza et al, J Rehabil Med)および2016年(Cieza et al, Disabil Rehabil)にアップデートされた。
- このルールに基づき、これまでに100以上の論文で項目のリンクについての報告がなされている。

Number	Rule	Example
1.	Before one links meaningful concepts to the ICF categories, one should have acquired good knowledge of the conceptual and taxonomical fundamentals of the ICF, as well as of the chapters, domains, and categories of the detailed classification, including definitions.	
2.	Each meaningful concept is linked to the most precise ICF category.	Item C4 of the West Haven-Yale Multidimensional Pain Inventory: "Play cards and other games". This item is linked to the 3rd level category d9200 "Play" and not to the 2nd level category d920 "Recreation and Leisure".
3.	Do not use the so-called "other specified" ICF categories, which are uniquely identified by the final code 8. If the content of a meaningful concept is not explicitly named in the corresponding ICF category, the additional information not explicitly named in the ICF is documented.	Item 17 of the Stait-Trait Anxiety Inventory: "I am worried". This item is linked to b152 "Emotional functions" and the additional information "worried", which is not explicitly named in the ICF, is documented. Item 5.1 of the Aberdeen Low Back Pain Scale: "In your right leg, do you have pain in the foot/ankle?". The meaningful concept "pain in right foot/ankle" identified in this item is linked to b28015 "Pain in a lower limb" and the additional information "right foot/ankle" not contained in that category is documented.
4.	Do not use the so-called "unspecified" ICF categories, which are uniquely identified by the final code 9 but the lower level category.	Item 14 of the Dallas Pain Questionnaire: "How much do you think your pain has changed your relationship with others". The meaningful concept "your relationship with others" is linked to d7 "Interpersonal interactions and relationships" and not to d799 "Interpersonal interactions and relationships, unspecified".
5.	If the information provided by the meaningful concept is not sufficient for making a decision about the most precise ICF category it should be linked to, the meaningful concept is assigned nd (not definable). Special cases of this rule: a. Meaningful concepts referring to health, physical health or mental (emotional) health in general, are assigned nd-gh, nd-ph or nd-mh (not definable-general health, not definable-physical health, not definable-mental health), respectively. Meaningful concepts referring to quality of life in general are assigned nd-qol (not definable-quality of life).	Item of section 5 of the St. George's Hospital Respiratory Questionnaire: "I have unpleasant side effects from my medication". The meaningful concept "side effects" is assigned "nd". Item 1 of the SF-36: "In general, would you say your health is ...?". The meaningful concept "health" is assigned "nd-gh". Item 1 of the WHOQoL-Bref: "How would you rate your quality of life?". The meaningful concept "quality of life" is assigned nd-qol.
6.	If the meaningful concept is not contained in the ICF, but it is clearly a personal factor as defined in the ICF, the meaningful concept will be assigned pf (personal factor). Personal factors are defined in the ICF as follows: "The particular background of an individual's life and living, and comprise features of the individual that are not part of a health condition or health states. These factors may include gender, race, age, other health conditions, fitness, lifestyle, habits, upbringing, coping styles, social background, education, profession, past and current experience (past life events and concurrent events), overall behaviour pattern and character style, individual psychological assets and other characteristics, all or any of which may play a role in disability at any level".	Item 29 of the Quality of Life Index - cardiac version IV: "... Your faith in God?". The meaningful concept "faith in God" is assigned pf.
7.	If the meaningful concept is not contained in the ICF and it is clearly not a personal factor, this meaningful concept is assigned nc (not covered by ICF).	Item 3 of the Hamilton Rating Scale for Depression: "... attempts at suicides". This meaningful concept is assigned nc.
8.	If the meaningful concept refer to a diagnosis or a health condition, the meaningful concept will be assigned hc (health condition)	Item 8 of the Asthma Quality of Life Questionnaire: "How often during the past two weeks did you feel short of breath as a result of your asthma?". The meaningful concept "asthma" is assigned hc.

既存の評価スケールを用いた情報収集

例：FIM (Functional Independence Measure)

更衣 (上) → d540 更衣

更衣 (下)

入浴 → d510 自分の身体を洗うこと

FIM

MoCA

SIAS

...

ICF コアセット

日本版評価セット

数値化の方法

例：d4 運動・移動 の項目群

FIM

トイレ移乗

ベッド移乗

浴槽移乗

歩行

ABMS

起き上がり

座位保持

立ち上がり

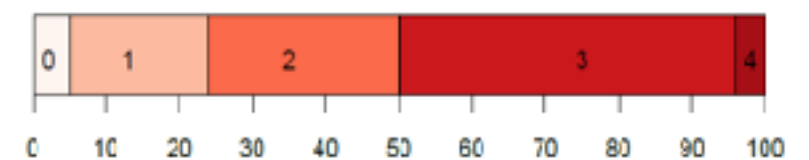
立位保持

...

d4 スコア
計 45点/ 80点

Rasch分析

0-100の
標準指標化

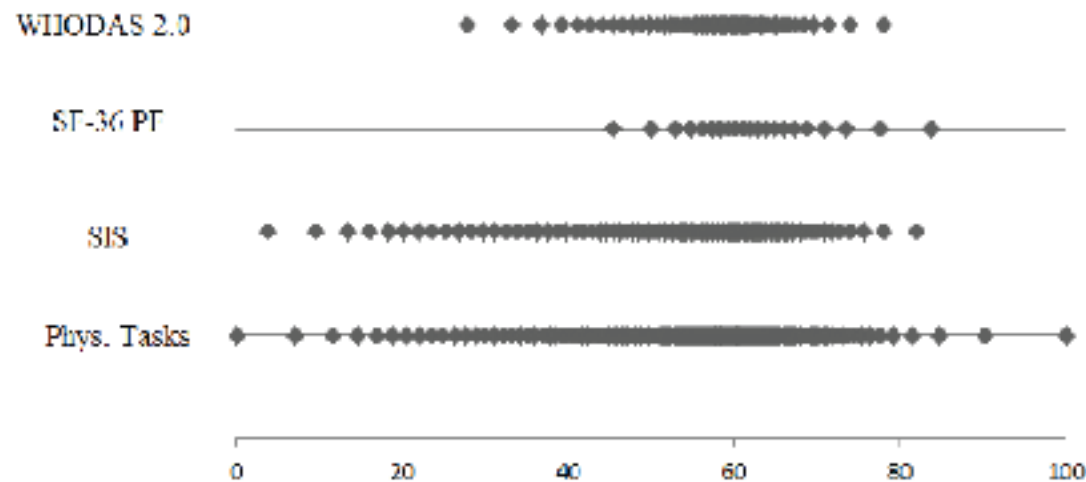


Prodinge et al, 2016

データの互換性

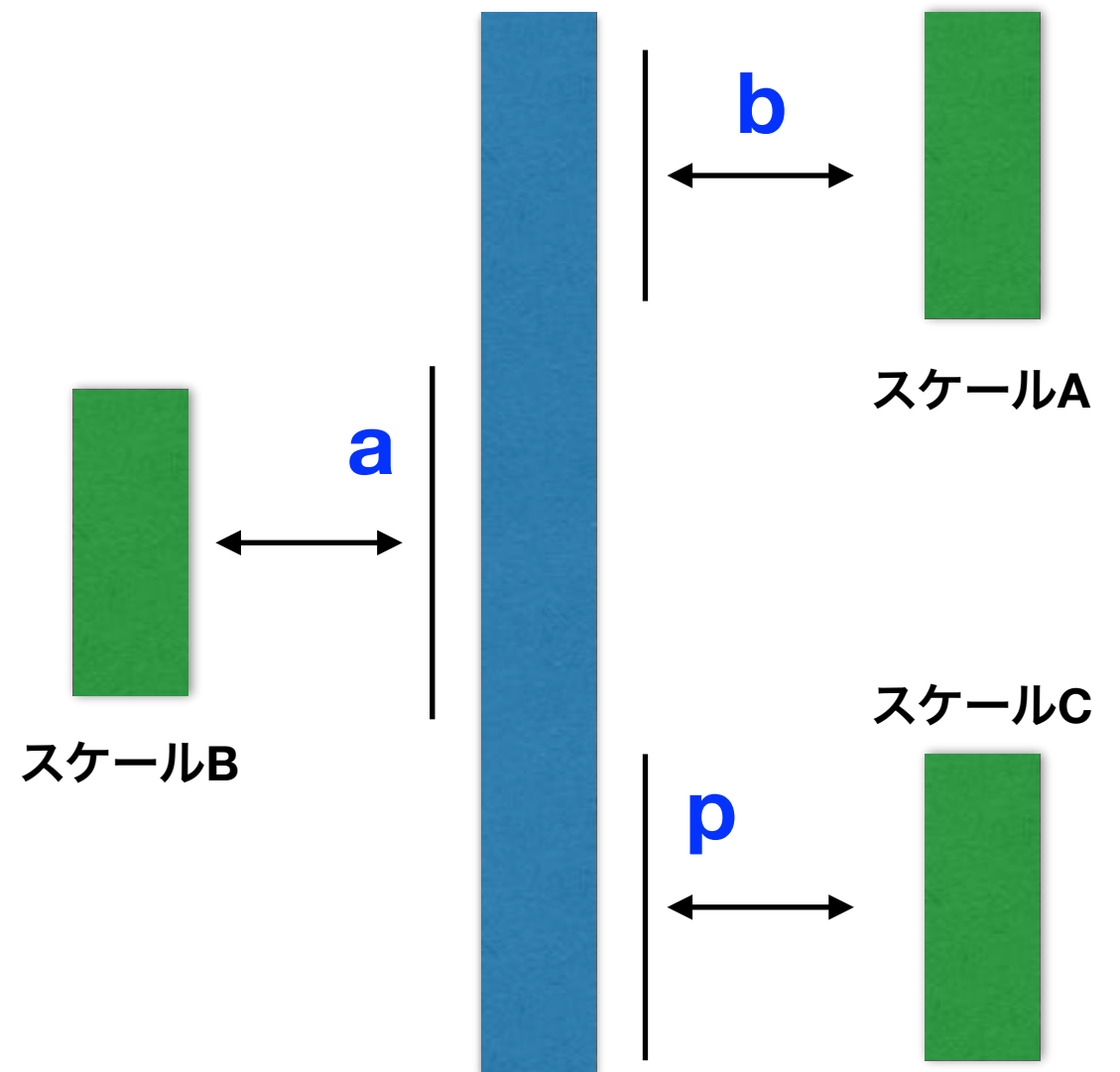
- Rasch分析を使用することにより、他のスケールやICFの取り組みと相互比較の仕組みを作ることができる

Figure 2: Operational ranges of the three scale sets against the Physical Tasks Reference Metric



Prodingen et al, 2017

ICF rehab set 評価セット 日本版



Approach 2

既存のスケールを使った情報収集

課題

- ICFリハビリテーションセットの30項目を埋めるだけでも多くのスケールの情報を必要とする
- 既存のスケールでカバーできない項目が多々ある
(質問紙が適用できる症例は一部)
- 小項目ごとの比較が難しい

二つのアプローチの組み合わせによる データベースの構造

簡易なデータセットによる
スクリーニング

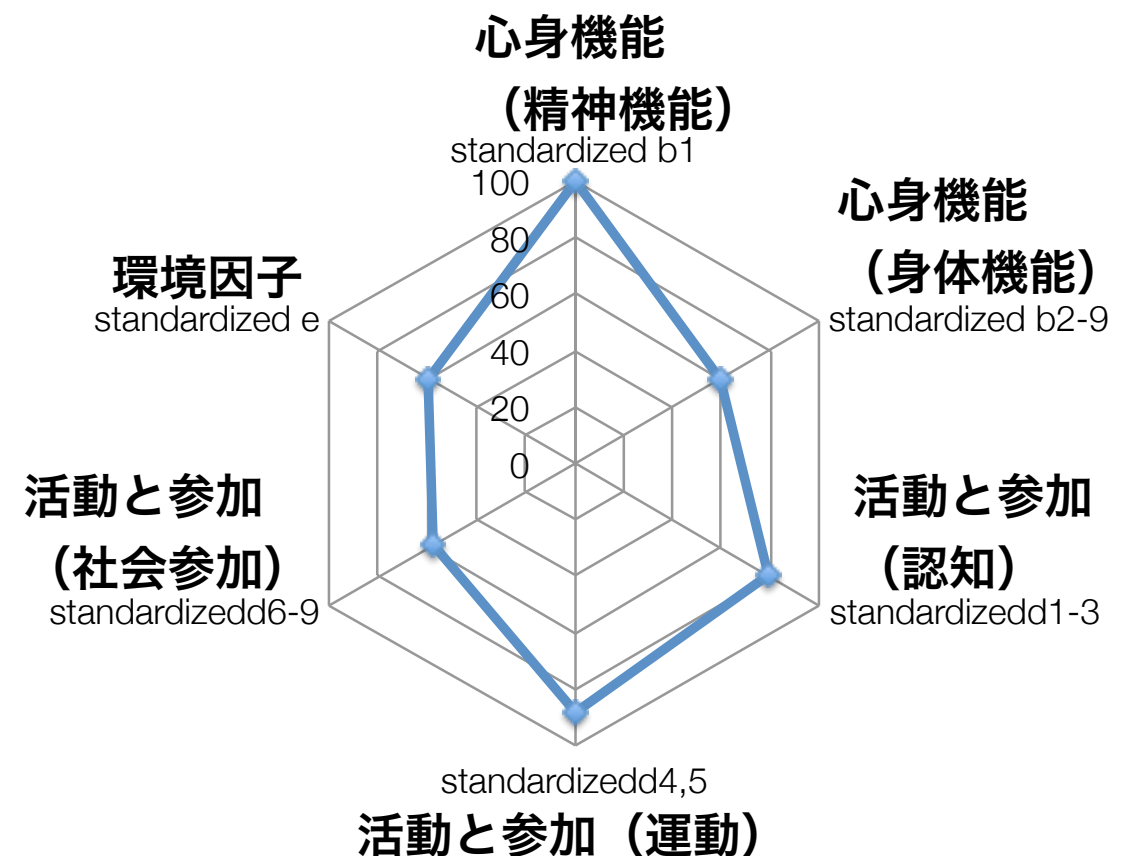
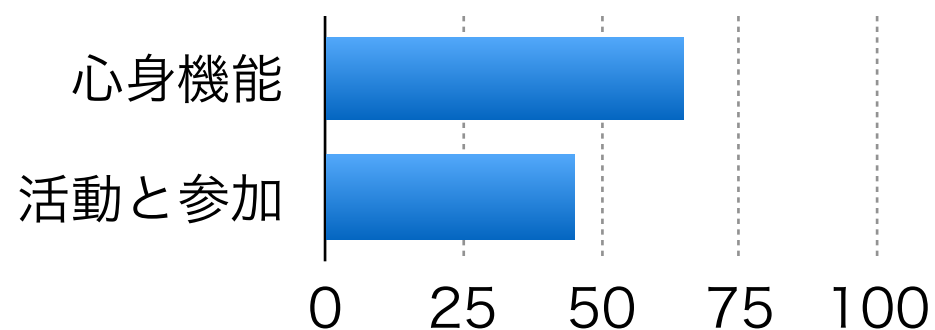


既存のスケールを加えた
拡張版データセットによる
詳細な評価

項目ごとの評価

	Score	M	D	B	H
b130	2	✓			
b134	2	✓			
⋮					
d230	1				✓
d240	2				✓
d410	1		✓	✓	
d415	3		✓	✓	
⋮					

標準指標化



構築を目標としているシステム：

ICFを用いた結果のフィードバックの仕組み

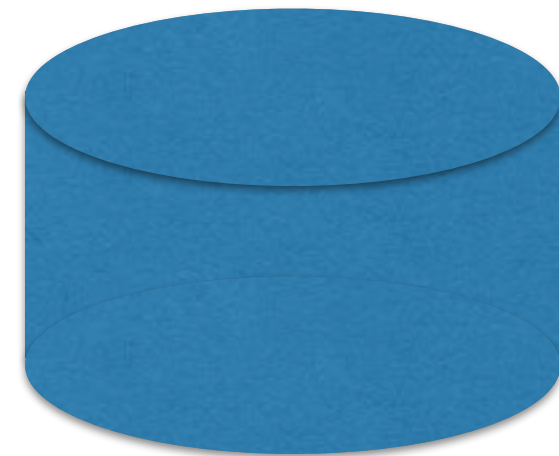
ICFリハビリテーション
セットを用いた評価
(全ての患者)



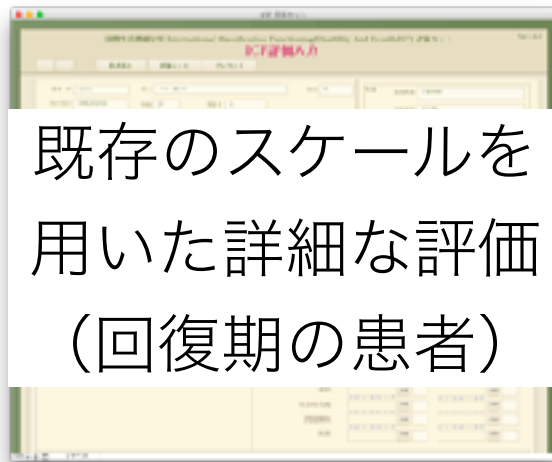
データの入力



データベース



既存のスケールを
用いた詳細な評価
(回復期の患者)



変換表



標準化指数

(ソフトウェアから自動的にフィードバック：

同様の患者と比較してどのくらいなのか?)