Disability determination: contribution of the ICF-CY

SOCIAL SECURITY INCOME CHILDREN’S DISABILITY PROGRAM COMMITTEE MEETING
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Disability determination based on diagnoses

ICD-10:
F71 moderate mental retardation G40.4 Other generalized epilepsy and epileptic syndromes

DSM-5:
Intellectual Developmental Disorder 318.0 moderate

Issues in determination of disability

- Diagnoses collapse information (signs & symptoms) - homogenize functional variability
- Problem of sensitivity: same diagnosis - differences in functioning
- Problem of specificity: different diagnoses share functioning characteristics
- Problem of dimension of severity
- Diagnosis is static & permanent: fails to reflect changes in functioning with life experience and development

Disability determination based on functioning

b16713.2 Expression of gestural language
b144.2 memory function
d155.3 acquiring skills
d160.3 focusing attention
d2304.2 managing changes in daily routine
d710.3 basic interpersonal relationships
e1301 Assistive products and technology for education

Issues in determination of disability

- Holistic view of health and functioning
  - Inclusive, of health and functioning universal of all persons
- Unit of classification
  - Diagnoses are not the units of classification
  - Classification of “experiences of doing/participating” (signs & symptoms) of persons & “situations/circumstances” in which persons found;
- Output
  - Alpha-numeric codes of Body Structures (s) and Functions (f), Activities/Participation (d) and Environmental Factors (e)
  - Documentation of disability requires assignment of qualifier value to alpha-numeric code

Disclosure

I have no financial relationships with commercial entities producing healthcare goods or services.
Using the ICF-CY in determination of disability

1. Defining the appropriate domain “fit for purpose”
2. Deriving set of applicable codes
3. Specifying the nature of evidence needed
4. Operationalizing qualifier levels
5. Mapping codes to sources of evidence
6. Illustration of 2 national examples applying ICF/ICF-CY in determination of disability

1. Defining the appropriate domain: activity and participation
- Activity: performance of an action or activity
- Participation: engagement in a role or life situation
- Activity and participation are products of person’s (BF & BS) ongoing interaction with the physical, social and psychological environment (EF)

Impairments, limitations, restrictions reflecting difficulties in child-environment interaction

<table>
<thead>
<tr>
<th>Body functions, body structures</th>
<th>Activity</th>
<th>Participating indicators</th>
<th>Physical Social Psychological Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of opportunity to act on/ react to environment</td>
<td>Lack of environmental stimulation /feedback</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Deriving set of applicable domain codes fit for purpose.
- How does the child’s mind and body function? BF Chapters 1-8; BS Chapter 1-8
- How does the child learn? BF Chapter 1; A&P Chapters 1,3
- How does the child respond/adapt to situational demands? A&P Chapter 2
- What characterizes the child's independence? A&P Chapters 4-6

2. Deriving set of applicable domain codes fit for purpose.
- What is the nature and level of child’s participation? A&P Chapters 7-9
- What barriers and facilitators impact the child’s functioning? EF Chapters 1-5


EU Working group derivation of 15 Body function and 15 Activity/Participation codes for core set (from 191)

<table>
<thead>
<tr>
<th>Body functions</th>
<th>Activity/Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B164 Mental functions</td>
<td>D399 Communication unspecified</td>
</tr>
<tr>
<td>B230 Sensation of pain</td>
<td>D410 Changing basic body position</td>
</tr>
<tr>
<td>B455 Exercise tolerance function</td>
<td>D415 Maintaining body position</td>
</tr>
<tr>
<td>B710 Mobility of joint function</td>
<td>D430 Lifting and carrying objects</td>
</tr>
<tr>
<td>B730 Muscle power function</td>
<td>D440 Fine hand use</td>
</tr>
<tr>
<td>D110 Watching</td>
<td>D445 Hand and arm use</td>
</tr>
<tr>
<td>D115 Listening</td>
<td>D450 Walking</td>
</tr>
<tr>
<td>D155 Acquiring skills</td>
<td>D470 Using transportation</td>
</tr>
<tr>
<td>D177 Making decisions</td>
<td>D720 Complex interpersonal relations</td>
</tr>
<tr>
<td>D220 Undertaking multiple tasks</td>
<td></td>
</tr>
</tbody>
</table>
3. Specifying the nature of evidence needed.

- The ICF-CY is a classification of codes and qualifiers - it is not a measurement tool.
- Applying the ICF-CY requires evidence for using codes and qualifiers to describe a child’s functional limitations.
- Evidence of a child’s functional limitations can be based on observation, laboratory results, rating scales, performance tests, professional judgment, parent report of the child’s limitations and difficulties.
- Use of evidence-based codes and qualifiers affirms the scientific contribution of ICF-CY.

4. Operationalizing the qualifier level

Criteria proposed for standardizing the application of the universal qualifier depending on the level of measurement available for the evidence of impairment, limitation or restriction.


### Operationalizing levels of the universal qualifier in measurement

<table>
<thead>
<tr>
<th>Universal qualifier (ICF-CY)*</th>
<th>0 no problem</th>
<th>1 mild</th>
<th>2 moderate</th>
<th>3 severe</th>
<th>4 complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage*</td>
<td>0-4%</td>
<td>5-24%</td>
<td>25-49%</td>
<td>50-95%</td>
<td>96-100%</td>
</tr>
<tr>
<td>Quantifying terms</td>
<td>None, absent negligible</td>
<td>Slight, low</td>
<td>Medium, fair</td>
<td>High</td>
<td>Total</td>
</tr>
<tr>
<td>Descriptive terms in records</td>
<td>Average or above average</td>
<td>Slightly below average</td>
<td>Moderately below average</td>
<td>Very low</td>
<td>Extremely low</td>
</tr>
<tr>
<td>Clinical judgment of difference/ limitation</td>
<td>No difference</td>
<td>Slight difference</td>
<td>Moderate difference</td>
<td>Serious difference</td>
<td>Extreme difference</td>
</tr>
</tbody>
</table>

#### Standard deviation units

- Standard score, mean 100, sd=15: 86+ 71.85 56.70 41.55 <40
- Scaled score, mean 10; sd=3: >7 5-7 2-4 1 <1
- T-score, mean 50; sd=10: >41 31-40 21-30 11-20 0-10
- Percentile ranks: >23 11-23 4-11 1-4 <1
- Standard deviation units: >-1.0 -1 to -2 -2 to -3 -3 to -4 >-4

5. Mapping codes to measurement

- Coding of severity should be based on evidence that can be applied to the 0-4 scale of the ICF-CY (no=0, mild=1, moderate=2, severe=3, complete=4).
- Evidence for decreasing/deviating levels of functioning is common in clinical judgment as well as assessed performance on tests and measures.
- Mapping identified codes to assessment approaches and measures.
Using ICF-CY codes to standardize measurement and treatment

**Study**

**Purpose**
Identify the extent to which rehabilitation measures for children assess "participation in everyday life situations".

**Method**
Review of 16 measures used to assess children 2-12 years of age.

**Results**
11 of the 16 measures were found to have 50% or more codes for participation; Coverage of measures ranged from 3 to 9 of A&P chapters; Lowest coverage was for Chapter 7 (Interpersonal Interactions & Relationships).

**Implication**

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Using ICF-CY codes to standardize measurement of participation in 16 child rehabilitation measures (Chien et al, 2014)

**Activity items**
- Learning
- General tasks and demands
- Communication
- Mobility
- Self-care
- Daily living
- Health
- Social and civic life

**Participation items**
- Domestic life
- Interpersonal relationships
- Major life areas

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Example: using ICF-CY in evaluation of eligibility for disability services in Taiwan

**Study**

**Purpose**
To standardize evaluation system for disability certification under Disability Legislation in Taiwan.

**Method**
Health professionals reviewed ICF/ICF-CY manuals and assessment measures to identify a limited set of codes for evaluation of disability.

**Adult and child measures for disability evaluation were developed based ICF codes:**
- Measure for child (58 items) 15 body function/structure codes; 20 activities/participation codes and 18 environment factors.

**Implication**
Change from earlier diagnostic, medical model of eligibility to comprehensive, holistic model based on ICF-CY.

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ICF codes for disability evaluation

**FUNDES-adult version derived from WHODAS 2.0**
- Disabilities and Functioning Scale (DAS) - Disability Assessment Scale (DAS).
- Disability Assessment Scale (DAS).
- WHODAS 2.0.

**FUNDES-child version derived from CFFS**
- Child Functioning and Disability Scale (CFFS).

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National framework of disability evaluation and welfare services in Taiwan

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Example: using ICF-CY in disability policy in Armenia:

- Current legislation (MoLSI-/2011)
- Disability of the person is based on documentation of impairments of body functions and limitations of vital activities.
- Six classes of body functions are mental functions, sensory functions, speech functions, metabolic disorders and body structures.
- Impairments of body functions may be defined in terms of mild, moderate, severe and profound levels.
Disability policy in Armenia: determination of eligibility (MoLSI-2011)

- Eight types of vital activities are: self care, independent mobility, acquiring education, working, self-orientation, communication, self-regulation and play (children).
- Severity of vital activities is described at three levels: Mild Qualified Functioning, Increased Limitation, State of Inactivity
- Disability is defined by limitations of one type of vital activity or a combination of types of vital activities

Using the ICF-CY in determination of disability

- Differentiate needed content for assessment of vital activities and body disorders
- What are relevant ICF-CY domains/codes for:
  - Vital activities (Activities &Participation)
  - Body disorders (Body Functions & structures)
- Identify limited number of codes from the ICF-CY as indicators of key body functions and activities and participation
- Delphi survey of stakeholders
- Match codes to existing tools or develop new tools or measures for evidence-based assessment

Delphi survey yielded 68 codes: proposed type and source of evidence of disability

<table>
<thead>
<tr>
<th>Domain</th>
<th>Present/absent</th>
<th>Source of evidence</th>
<th>Severity scale</th>
<th>Source of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Function</td>
<td>4</td>
<td>(observation, medical exam, test, self/ proxy report..)</td>
<td>14</td>
<td>(observation, medical exam, test, self/ proxy report..)</td>
</tr>
<tr>
<td>Body Structure</td>
<td>3</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
<tr>
<td>Activities &amp; Participation</td>
<td>18</td>
<td>&quot;</td>
<td>7</td>
<td>&quot;</td>
</tr>
<tr>
<td>Environmental Factors</td>
<td>19</td>
<td>&quot;</td>
<td>3</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

Determination of disability: summarizing evidence with decision rules

- Application and self-report of ICF-CY based data
- Evidence of number and intensity of environmental barriers to functioning
- Summary of number and severity of codes measured across 4 domains (Body Functions and Body Structures, Activities / Participation, EF)
- Algorithms/decision rules for determination of eligibility for disability

Medical Report including ICF-CY based data

References


THANK YOU