

Utilizing the ICF to assess and categorize survey questions

S. Antonio Ruiz-Quintanilla

Robert R. Weathers & Andrew Houtenville

Employment and Disability Institute

Cornell University

School of Industrial and Labor Relations

Ithaca, New York

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**LIVING IN OUR ENVIRONMENT:
The Promise of ICF**

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Background

- **Problems defining disability**
 - Many different definitions of disability used for government programs, laws, and statistical purposes.
- **Recent efforts to develop a “population estimate.”**
 - Executive Order 13078 and Bureau of Labor Statistics.
 - U. S. Census Bureau.
- **Challenges related to these efforts**
 - Mapping definitions to survey questions.
 - Mapping survey questions to appropriate definitions.
- **ICF provides detailed classification system that may help inform these efforts.**

Objectives

- Use ICF to organize disability survey questions.
 - Examine coverage of ICF categories and content of survey questions used to identify these categories.
- Identify disability surveys questions that do not clearly fit within the ICF categories.
- Estimate prevalence rate of ICF categories in surveys.
 - Where do differences in prevalence rates arise and what is likely driving the differences.
- Estimate employment outcomes for each ICF category.

The ICF

- Developed by World Health Organization (2001)
- ICF components include the following:
 - Body functions, body structures,
 - Activities and participation, and
 - Environmental factors.
- Many disability definitions are based upon “health or health related condition that severely limit one or more activities or life situations.”
- ICF activities and participation component provides detailed classification of activities and life situations.

ICF Activities and Participation Categories

- Learning and applying knowledge.
 - Purposeful sensory, basic learning, applying knowledge.
- General tasks and demands.
- Communication
 - Receiving, producing, use of communication devices.
- Mobility
 - Changing and maintaining body position; carrying, moving and handling objects; walking and moving; and moving around using transportation.

ICF Activities and Participation (cont'd)

- **Self-care**
- **Domestic life**
 - Acquisition of necessities, household tasks, caring for objects and assisting others.
- **Interpersonal interactions**
 - Receiving, producing, use of communication devices.
- **Major life activities**
 - Education, Employment, Economic Transactions.
- **Community, social and civic life**

Datasets

- American Community Survey
 - Designed to replace Decennial Census long form.
 - Sample size for analysis is 668,615 persons ages 21 to 64.
- Current Population Survey
 - Primary source of labor force statistics
 - March Supplement contains income and poverty data.
 - Sample size for analysis is 119,994.
- National Health Interview Survey
 - Major source of data on health and health related states.
 - Sample size for analysis is 23,838 persons ages 21 to 64.
- Survey of Income and Program Participation
 - Major source of data on program participation.
 - Sample size for analysis is 39,052 persons ages 21 to 64.

Matching Survey Questions

- Select all survey questions used to identify disability in the four surveys.
- Examined wording and meaning of each question and matched it to ICF descriptors.
- Some cases were relatively straightforward
 - e.g. the ICF self care category matches ADLs.
- Some cases were somewhat difficult
 - “Because of a physical, mental, or emotional condition lasting 6 months or more, does this person have any difficulty in doing any of the following activities a. Learning, remembering, or concentrating?”
- Made consistent decisions across datasets.

Findings Coverage of ICF Categories

- Surveys contain gaps in coverage of ICF categories.
- Gaps vary across surveys.
 - SIPP adult disability module has best coverage among four surveys.
 - ACS, CPS tend to cover less.
- Some surveys focus more attention within ICF categories than others.
- Some surveys include questions with content that crosses over ICF categories.
 - In some cases, parts of these questions may be more relevant for body functions and body structures component.

Table 3. Number of Survey Questions Used to Identify ICF

ICF Classification	ACS	CPS	NHIS	SIPP
Learning & Applying Knowledge: Purposeful Sensory Experiences	1	2	2	2
Learning & Applying Knowledge: Basic Learning			2	1
Learning & Applying Knowledge: Applying Knowledge	1	1		
			1	1
General tasks and demands	0	0	1	3
Communicating-receiving	0	0	0	0
Communicating-producing (speaking, nonverbal messages, ASL)	0	0	1	1
Communicating-Conversation and use of communication devices/techniques	0	0	0	1
Mobility: Changing and Maintaining body position	0	0	4	4
Mobility: Carrying, Moving, and handling objects			3	3
	1	1		
Mobility: Walking and moving			3	3
Mobility: Moving around using transportation	0	0	0	0

Table 3 (cont'd). Number of Survey Questions Used to Identify ICF Concepts

ICF Classification	ACS	CPS	NHIS	SIPP
Domestic Life: Acquisition of Necessities	1	0		1
Domestic Life: Household Tasks (preparing meals, doing housework)	0	1	1	2
Domestic Life: Caring for household objects and assisting others	0	0	0	0
General interpersonal interactions	0	0	0	0
Particular interpersonal relationships	0	0	0	1
Major Life Areas: Education	0	1	0	0
Major Life Areas: Employment	1	1	2	2
Major Life Areas: Economic life	0	0	0	1
Community, social and civic life	0	0	3	0

Content of Survey Questions

Findings

- Descriptions of ICF items within an ICF category differ across survey questions.
 - Some surveys use questions that provide a more comprehensive description of a particular ICF item than others.
- Qualifiers differ across survey questions for a particular ICF category.
 - Duration of impairment Qualifiers
 - Severity of limitation qualifiers
- Response scales differ across survey questions for a particular ICF item.
 - Yes/No versus Not Difficult/A little/Somewhat/A lot/Can't do.

Example: ICF Self-Care Category

- ACS: Because of a physical, mental, or emotional condition **lasting 6 months or more**, does this person **have any difficulty** in doing any of the following activities...b. Dressing, bathing, or getting around inside the home?” (R:Y/N)
- NHIS: Because of a physical, mental, or emotional problem, do you **need the help of other persons** with personal care needs, such as **eating**, bathing, dressing, or getting around inside this home? (R: Y/N)
- SIPP
 - Because of a physical or mental health condition, do you **have difficulty** doing any of the following by yourself: (a) getting around inside of home?, (b) taking a bath or shower?, (c) dressing?, **(e) eating?, (f) toileting?**
 - Because of a physical or mental health condition, do you have difficulty doing any of the following by yourself? **(I) taking the right medication at the right time?** (R: Y/N)

Disability Questions that Don't Fit

- **Environmental factors**
 - Use of special equipment, such as a cane, a wheelchair, a special bed, or a special telephone?
 - Participation in disability programs.
- **No direct relation to activities or participation**
 - Do you have: Any other physical disability? Any emotional or mental disability?"
- **No specifics on activities**
 - Are you limited in any way in any activity because of a physical, mental or emotional problem? What is it?..(list of body structures)

Prevalence Rate Estimates

- Significant variation in prevalence rates across the datasets-- both within ICF items and across items.
- Relative rankings similar across datasets
 - Highest prevalence rates for mobility category, lowest for self-care category.
- Related to differences in content of the questions, need to understand these differences when interpreting differences in prevalence rates across datasets.
- Differences are important to consider when examining employment and economic well being outcomes.

Table 7. Aggregated Prevalence Rates, Ages 21 to 64

ICF Classification	Prevalence (Percent)			
	ACS	CPS	NHIS	SIPP
Purposeful Sensory	2.8	(a)	2.0/(b)	4.0
Learning and applying knowledge	4.0	(a)	1.9	1.7
General tasks and demands	NA	NA	3.5	5.3
Communicating	NA	NA	NA	0.9
Mobility	7.5	(a)	11.2	13.0
Self Care (ADLs)	2.0	NA	1.0	2.7
Domestic life	2.9	(a)	2.2	3.1
Interpersonal relationships	NA	NA	NA	1.6
Major life areas: education, employment, economic life	6.9	7.7	9.6	10.1
Community, social and civic life	NA	NA	2.7	NA
Any Activity Limitation or Participation Restriction	12.0	7.7	16.2	19.9
Restricting to American Community Survey	12.0	7.7	14.7	18.4
Restricting to Existing CPS Concept (Work Limitation)	6.9	7.7	9.6	10.1
Restricting to NHIS	12.0	7.7	16.2	19.6
Restricting to SIPP	12.0	7.7	16.1	19.9

Aggregated Employment Rate Outcomes

- Employment rates, and other key outcomes, sensitive to measure of disability.
 - Variation in employment measures within ICF items and across items.
- Across ICF components, “purposeful sensing” category has the highest employment rate.
 - Surveys that capture higher proportions of this ICF component will produce higher employment rates, all else equal.
- Within ICF categories, higher prevalence rates related to higher employment rates.

Table 8. Employment Rates for ICF Categories, Ages 21 to 64

ICF Classification	ACS	CPS	NHIS	SIPP
Purposeful Sensory	46.7	(a)	56.5	57.5
Learning and applying knowledge	28.1	(a)	17.5	46.8
General tasks and demands	NA	NA	38.6	43.0
Communicating	NA	NA	27.9	39.8
Mobility	32.1	(a)	40.7	48.8
Self Care (ADLs)	17.6	NA	12.5	26.7
Domestic life	17.3	(a)	16.1	21.3
Interpersonal relationships	NA	NA	NA	39.4
Major life areas: education, employment, economic life	18.0	19.3	28.6	31.6
Community, social and civic life	NA	NA	22.9	NA
Employment rate with or without disability	73.8	74.5	73.2	78.1
Any activity limitation and participation restriction	37.8	19.3	47.1	53.1
Restricting to ACS	37.8	19.3	45.8	51.0
Restricting to existing CPS concept (work limitation)	18.0	19.3	28.6	31.4

Summary and Conclusions

- The ICF can help guide the development of survey questions.
 - Organizes concepts captured in surveys.
 - May help operationalize disability definitions.
- Examining differences in prevalence rates across surveys suggests estimates are sensitive to content of question, qualifiers, and/or response scales.
- Differences in coverage of ICF concepts can affect outcomes.
 - Policymakers must be aware of concepts covered by survey questions and implications for the outcome measures.

Next Steps

- More carefully examine sensitivity of estimates to survey question content.
 - For example, how sensitive are estimates to duration qualification. May be possible to test in SIPP.
- Make recommendations for the development of future survey disability questions.
 - Interagency committee on disability statistics
 - Disability statistics state of the science conference



S. Antonio Ruiz-Quintanilla

Employment and Disability Institute
Cornell University
School of Industrial and Labor Relations
305 ILR Extension Building
Ithaca, New York 14853

Telephone: 607-255-2132

Fax: 607-255-2763

Tony_Ruiz@cornell.edu

EDI Website: **www.edi.cornell.edu**