

Measuring Interventions in AT Service Delivery Practice: Development of AT-ISI

James Lenker, PhD, OTR/L
University at Buffalo
lenker@buffalo.edu

The Goal of Outcomes Research for AT Service Delivery Practice

"What works, for whom, and why?"

- Intervention ~ treatment (i.e., "*what*")
- Measured outcomes (i.e., "*works*")
- Target population (i.e., "*whom*")
- Treatment theory (i.e., "*why*")

AT interventions are complicated and diverse

- Complexity

- Devices
- Services (assessment, fitting, training)
- Environmental modifications
- Task modification

- Diversity

- Practitioner disciplines & expertise
- Treatment settings
- Funding models
- No standards of practice

Typical AT studies report an approximate measurement of the right factors

- **Device emphasis**

- *“Participants were persons with muscular dystrophy who used high tech environmental controls, including manufacturers X, Y, & Z”*

- **Training emphasis**

- *“Participants completed essays using screen reading software designed for persons with learning disability. All received 45-60 minutes of 1-on-1 training in order to be minimally competent with AT use”*

- **Assessment emphasis**

- *“Participants were older adults who received an intensive in-home AT team evaluation by an OT, nurse, and a technician. Participants received AT devices that were recommended by the team”*

Current Research: AT Intervention Specification Instrument (AT-ISI)

- Goals:
 - Routinely capture AT service encounters
 - Improve quality of research reporting
- Domain: Mobility-related ATDs
- Burden: < 2 minutes to complete
- Mobility-related AT devices
 - Non-seated usage
 - o Ambulation aids (crutch, cane, walker)
 - Seated usage
 - o Wheeled mobility (manual & power)
 - o Seating and positioning
- Application: USA, Canada, and ?? (EU, Australia)

Our Activities

- Review existing classifications
 - Device
 - Services
- Develop prototype forms
- Expert review
- Clinical testing
 - Therapists
 - Suppliers

Review of classifications

- Devices
 - ISO 9999
 - HCPCS codes (USA)
 - VA: Veterans Affairs (USA)
 - Ontario ADP (Canada)
 - RTI classification
 - ABLEDATA
- Services
 - Nursing Interventions Classification (NIC)
 - International classification of health interventions (ICHI)
 - Donabedian framework

A Conceptual Basis for Measuring Interventions (Donabedian, 1966)

- **Structure**

- Aspects of care that are relatively unchanging
- Effects on outcomes are more distal

- **Process**

- That part of care that involves direct interaction between clinician and patient/consumer
- Effects on outcomes are more proximal

Structure factors

- Geographic region
- Reimbursement model
- Resources (e.g., equipment, space) allocated to AT services
- Treatment model (e.g., multi-disciplinary)
- Practitioners
 - Professional discipline, level within discipline, % practitioner FTE devoted to AT service delivery, years of experience, advanced certification

Process Factors

- **Treatment steps**

- Assessment, recommendation, reimbursement advocacy, training, technical support
- Including other team members (e.g., family, vendor, school)
- Individualization of treatment to client

- **Treatment strength**

- Intensity: minutes per session
- Frequency: days per week
- Duration: weeks or months

Our Activities

- *Review existing classifications*
 - *Device*
 - *Services*
- Develop prototype forms
- Expert review
- Clinical testing
 - Therapists
 - Suppliers

Benefits of Intervention Specification

- Pooling data across settings, regions, and countries
 - Replicate studies (*Fuhrer, 2003*)
 - Compare findings across settings and populations (*De Jong et al., 2004; Whyte & Hart, 2003*)
 - Determine effects of organization and policy changes on outcomes (*De Jong et al., 2004*)
 - Establish standards of data collection & electronic record keeping (*Ibid.*)
 - Develop practice guidelines (*Ibid.*) and treatment theory (*Sechrest et al., 1979*)
- More precisely articulate hypotheses (*Whyte & Hart, 2003*)
- Interpret study findings
- Detect confounding factors

References

- DeJong, G., Horn, S.D., J.A., G., Slavin, M.D., & Dijkers, M.P. (2004). Toward a taxonomy of rehabilitation interventions: Using an inductive approach to examine the "black box" of rehabilitation. *Archives of Physical Medicine & Rehabilitation, 85*(4), 678-686.
- Dijkers, M., Kropp, G.C., Esper, R.M., Yavuzer, G., Cullen, N., & Bakdalieh, Y. (2001). Quality of intervention research reporting in medical rehabilitation journals. *American Journal of Physical Medicine and Rehabilitation, 81*(1), 21-33.
- Donabedian, A. (1966). Evaluating the quality of medical care. *Milbank Quarterly, 44*, 166-203.
- Duncan, P.W., Hoenig, H., Samsa, G., & Hamilton, B. (1997). Characterizing rehabilitation interventions. In M. J. Fuhrer (Ed.), *Assessing Medical Rehabilitation Practices: The Promise of Outcomes Research* (pp. pp. 307-317). Baltimore: Paul H. Brookes.
- Fuhrer, M.J. (1997). Response and commentary: Comments on: Rehabilitation care and outcomes from the patient's perspective, presented by Andrew W. Kramer, MD. *Medical Care, 35*(6 Supplement), JS58-JS60.
- Fuhrer, M.J. (2003). Overview of clinical trials in medical rehabilitation: Impetuses, challenges, and needed future directions. *American Journal of Physical Medicine and Rehabilitation, 82*(10 Suppl), S8-S15.
- Hoenig, H., Duncan, P.W., Horner, R.D., Reker, D.M., Samsa, G.P., Dudley, T.K., et al. (2002). Structure, process, and outcomes in stroke rehabilitation. *Medical Care, 40*(11), 1036-1047.
- Hoenig, H., Sloane, R., Horner, R.D., Zolkewitz, B.S., Duncan, P.W., & Hamilton, B.B. (2000). A taxonomy for classification of stroke rehabilitation services. *Archives of Physical Medicine & Rehabilitation, 81*, 853-862.
- Keith, R.A. (1997). Treatment strength in rehabilitation. *Archives of Physical Medicine and Rehabilitation, 78*, 1298-1304.
- Kramer, A.M. (1997). Rehabilitation care and outcomes from the patient's perspective. *Medical Care, 35*(6 Supplement), JS48-JS57.
- LaClair, B.J., Reker, D.M., Duncan, P.W., Horner, R.D., & Hoenig, H. (2001). Stroke care: A method for measuring compliance with AHCPH guidelines. *American Journal of Physical Medicine and Rehabilitation, 80*, 235-242.
- Whyte, J., & Hart, T. (2003). It's more than a black box; it's a Russian doll: Defining rehabilitation treatments. *American Journal of Physical Medicine and Rehabilitation, 82*(8), 639-652.

Acknowledgements

Marcus Fuhrer, PhD, NIH

Jeff Jutai, PhD, CPsych, University of Ottawa

Louise Demers, PhD, OT(C), Univ. of Montreal

Frank DeRuyter, PhD, Duke University

This work has been supported in part by the National Institute on Disability and Rehabilitation Research (NIDRR) under Grant #H133A060062

Grazie Mille!