PERSON-CENTERED, PARTICIPATION-ORIENTED COGNITIVE REHABILITATION

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TRAUMATIC BRAIN INJURY
MODEL SYSTEMS

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PERSON-CENTERED

- AKA, Holistic Brain Injury Rehabilitation
- Originated by Yehuda Ben-Yishay, PhD, Leonard Diller, PhD, George Prigatano, PhD
  - Principles need not only apply to Day Programs
- Addresses the needs of the whole person
  - Cognitive, emotional, social, physical, spiritual
- Cognitive rehabilitation in the context of the person's overall:
  - Goals
  - Strengths
  - Weaknesses
  - External resources and barriers

VARYING PHILOSOPHIES AND APPROACHES

- Impairment focus vs. goal/outcome focus, i.e., ***participation-oriented***
- Medical Model
  - Intervention directed at the individual who is ill or injured
- Vs. Social Model
  - Intervention directed at the social system in which the "disabled" or "ill" person operates
- Top-down
  - Executive and metacognitive skills
- Vs. bottom-up
  - Specific cognitive abilities (e.g., attention, memory)

BASIC PRINCIPLES

- Based on standardized holistic evaluation
  - Holistic: Physical, cognitive, emotional, spiritual, social & physical environment
  - Ideally interdisciplinary
    - Brain injury MD, neuropsychologist, OT, SLP, PT, SW or family counselor
    - Additional medical evaluations as required
    - Other options: Specialists in vocational re-entry, family adjustment, vision disorders, vestibular disorders, substance abuse, mental health
  - Functional evaluations
  - Neuropsychological evaluation
  - Identifies both strengths and weaknesses
  - Mayo-Portland Adaptability Inventory (MPAI-4)

BASIC PRINCIPLES: MATCH SCOPE OF EVALUATION & REHABILITATION TO CASE COMPLEXITY

- Most persons with BI will benefit from focused CR or CR + limited services
  - Complicating factors:
    - Other cognitive problems
    - Emotional or behavioral disorders
    - Marital or family issues
    - Physical medical problems
    - Substance use
    - Impaired self-awareness
    - Improved cognitive function is of little real value to the person
- Some may require comprehensive day treatment
  - Severe and pervasive disabilities
  - Significant emotional and behavioral problems, lack of self-awareness
- Correct determination = effective and cost-efficient

BASIC PRINCIPLES

- Collaborative goal-setting focused on participation outcomes
  - Patient and family work with team to negotiate long term goals
  - Foundation for a ***Therapeutic Alliance***
  - "Begin with the end in mind"
    - Community reintegration
  - Goals = positive outcomes valued by patient
    - Not list of disabilities to be remediated
  - Goal-setting = executive function training
  - Discharge goals vs. step goals

BASIC PRINCIPLES

- Specific, Goal-oriented treatment plan
  - Therapeutic alliance
  - Communication with other team members
  - Regular meetings with and without patient/family
  - Strategic use:
    - procedural learning
    - learning vs. environmental interventions
    - Medications
  - Plan/practice for generalization
  - Contextualized CR
  - Work/independent living trials
  - Family/significant other participation

BASIC PRINCIPLES

- Standardized Monitoring of Progress
  - Record progress toward discharge & step goals
  - Modify treatment plan as appropriate
  - Standardized measures, e.g.,
    - Everyday Memory Questionnaire, Dysexectuvie Questionnaire
    - Goal Attainment Scaling for individualized goals
- Regular re-evaluations

GAS GOAL: PARTICIPANT ROUTINELY USES PROBLEM-SOLVING AND GOAL MANAGEMENT STRATEGIES TO SOLVE PROBLEMS IN EVERYDAY LIFE

Much better than expected: Participant learns and uses problem-solving and goal management strategies in addressing life problems almost all the time independently

Better than expected: Participant learns and uses problem-solving and goal management strategies in addressing life problems about 75% of the time independently

Expected Outcome: Participant learns and uses problem-solving and goal management strategies in addressing life problems 75% of the time with prompting

Less than expected: Participant has not learned and does not use problem-solving and goal management strategies

Much less than expected: Participant refuses to engage in systematic problem-solving

BASIC PRINCIPLES

- Make the most of nonspecific effects, ie, placebo effect
  - Therapeutic alliance
  - Positive expectations, hope
    - Danger of “nocebo” effect
  - Patient and significant other engagement
  - Support/encouragement from significant others

BASIC PRINCIPLES

- Post-discharge planning
  - Anticipate obstacles, need for reinforcement/practice
  - Environmental/social support
  - Self-management training/family training
  - Regular follow-up/refreshers as needed

SUMMARY

Key Principle	Rationale
Standardized holistic evaluation	Cognitive impairment often associated with other factors that affect outcome
Match evaluation/treatment to case complexity	Maximizes efficiency; minimizes cost
Collaborative, participation-focused goal-setting	Participation goals are of most value to patients and family
Specific goal-oriented treatment plan	Only target impairments and barriers that affect valued outcomes

SUMMARY

Key Principle	Rationale
Standardized monitoring of progress	Standardized assessment increases reliability; modify treatment based on ongoing assessment
Use nonspecific effects	Maximizes successful outcome and are often necessary (but not necessarily sufficient) conditions for successful outcome
Plan for post-discharge	To sustain gains: plan self-management strategies, follow-up, refreshers

REFERENCES

- Cantor J, Ashman T, Dams-O'Connor K, Dijkers MP, Gordon W, et al. Evaluation of the STEP intervention for executive dysfunction after traumatic brain injury: a randomized controlled trial with minimization. Arch Phys Med Rehabil 2014; 95; 1-9
- Cicerone KD. Remediation of 'working attention' in mild traumatic brain injury. Brain Inj 2002;16:185-95.
- Cicerone K, Levin H, Malec J et al.. Cognitive rehabilitation interventions for executive function: moving from bench to bedside in patients with traumatic brain injury. J Cogn Neurosci 2006;18:1212–22.
- Cicerone KD, Dahlberg C, Kalmar K, et al. Evidence-based cognitive rehabilitation: recommendations for clinical practice. Arch Phys Med Rehabil 2000;81:1596-615.
- Cicerone KD, Langenbahn DM, Braden C, et al. Evidence based cognitive rehabilitation: updated review of the literature from 2003 through 2008. Arch Phys Med Rehabil 2011;92: 519-30.
- Cicerone KD, Dahlberg C, Malec JF, et al. Evidence based cognitive rehabilitation: updated review of the literature from 1998 through 2002. Arch Phys Med Rehabil 2005;86:1681-92.
- Haskins EC, et al. Cognitive rehabilitation manual: translating evidence-based recommendations into practice. American Congress of Rehabilitation Medicine: Reston, VA 2012.
- Kennedy MR, Coelho C, Turkstra et al. Intervention for executive functions after traumatic brain injury: a systematic review, meta-analysis and clinical recommendations. Neuropsychol Rehabil 2008;18:257-99.
- Malec JF. Post-hospital rehabilitation. In Zasler, N. D., Katz, D. I., Zafonte, R.D. (Eds.), Brain Injury Medicine (2nd ed). New York: Demos, 2012.
- Malec JF. Comprehensive brain injury rehabilitation in post-hospital settings. In Sherer M, Sander AM (eds), Handbook of the Neuropsychology of Traumatic Brain Injury. New York: Springer, 2014.
- Ownsworth T. Self-identity after brain injury. New York: Psychology Press, 2014.
- Ponsford J, Sloan S, Snow P. **Traumatic brain injury: Rehabilitation for everyday adaptive living (2nd ed). New York: Psychology Press, 2013.**
- Sohlberg MM, Turkstra LS. Optimizing Cognitive Rehabilitation. New York: Guilford, 2011.

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