

BEHAVIORAL REHABILITATION: AN INTEGRATED APPROACH

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Presentation Topics

- The meaning of “behavior”
- Reasons that TBI may predispose to challenging behaviors (some overlap with other forms of ABI)
- Identify strengths and weaknesses of each of 4 general psychological domains in contributing to behavioral rehabilitation
 - Behavioral psychology
 - Neuropsychology
 - Psychopharmacology
 - Psychosocial approaches

Broad Classes of Problematic Behaviors

- Problems of behavioral excess:
 - Disorganized behaviors: behaviors that are problematic, but emerge out of confusion
 - Goal-directed behaviors: behaviors that attempt to fulfill a patient's goal (however poorly)
- Problems of behavioral impoverishment:
 - Failure to execute functionally important behaviors

Types of Behavior Problems

- What is a ‘behavior’?
 - Not “agitation” “Repetitive rocking”
 - Not “impulsivity” “Rapid responding with errors”
 - Not “depression” “Crying, talking about dying”

Reasons for Problematic Behaviors

- Frontal lobe damage (focal or diffuse):
 - Loss of inhibition over competing goal states (orbitofrontal)
 - Inability to generate and pursue functional goals (dorsolateral prefrontal)
- Temporal lobe (amygdala) damage: increased irritability and anger
- General issues: pain, confusion, language deficits, fatigue, memory deficits....
- Clinician “training” in problematic behaviors

BEHAVIORAL APPROACH

RELATIVE STRENGTHS

Allows Objective Definition of Target Behaviors

Facilitates communication among staff based on operational definitions of behavior

Allows objective measurement of response to behavioral or other treatment interventions (e.g., medications)

STRENGTHS (cont.)

Provides external sources of motivation for behavior change (reinforcement, punishment)

Explicitly specifies teaching strategies (e.g., shaping, chaining)

Encourages a search for environmental precipitants and allows for their manipulation

Attributes behavior change to staff's or family's interventions

Rewards & Punishments

	+	-
Reinforcement	Deliver something “good” (e.g., food, praise)	Take away something “bad” (e.g., seat belt buzzer)
Punishment	Deliver something “bad” (e.g., spanking, restraint)	Take away something “good” (e.g., allowance)

Note: “bad” and “good” are in the eyes of the beholder!

RELATIVE WEAKNESSES

Has difficulty addressing emotional states

Sees staff and family as agents of behavior change rather than as participants in a staff/patient/family system

Does not explicitly address the effects of cognitive deficits on choice of teaching strategies or reinforcement system

WEAKNESSES (cont.)

May miss single neuropsychological cause for multiple different behaviors

Does not address neurological and cognitive heterogeneity among patients with similar behavioral disturbances

May not be able to modify all types of behavior

May be viewed as “cold”, “inhumane” or “demeaning” by patients, families, and staff

NEUROPSYCHOLOGICAL APPROACH

RELATIVE STRENGTHS

Identifies, among patients with similar behavioral disturbances, neuropsychological subtypes which may have treatment implications

Helps delineate neuropsychological deficits which contribute indirectly to behavioral disturbances

Helps delineate neuropsychological strengths which can be mobilized

STRENGTHS (cont.)

Allows measurement of drug effects on cognitive processes

Suggests teaching hierarchies that are process-centered rather than task-centered

Suggests motivators which are most compatible with individual patterns of neuropsychological deficits

RELATIVE WEAKNESSES

Does not provide explicit teaching strategies
or motivators

Does not suggest treatments for behaviors
unrelated to neuropsychological deficits

PSYCHOPHARMACOLOGICAL APPROACH

RELATIVE STRENGTHS

Suggests adverse effects of medications on behavior and cognition

Suggests medications which may positively influence behavior

May predict effects of medications on non-target behaviors

RELATIVE WEAKNESSES

Not all adverse medication effects on cognition and behavior are known

Medication selection is largely a trial and error process (NO DRUG HAS PROVEN EFFICACY)

Medication effects are at the cellular level; desired effects are at the psychological/behavioral level; the correspondence is complex

Patients, families and staff may attribute improvement to medications rather than to their own actions

PSYCHOSOCIAL APPROACH

RELATIVE STRENGTHS

Addresses feelings, moods, and intrapsychic states

Looks to the social system (patient, family, staff) as the target of change, not just the patient

Patients and family may attribute behavioral change to their own efforts

STRENGTHS (cont.)

Considers behavior in the context of premorbid personality, family dynamics, and social events

Addresses adjustment to disability

Addresses developmental issues as they relate to present circumstances

RELATIVE WEAKNESSES

Feelings and intrapsychic states may be more difficult to operationalize than behaviors and changes may be more difficult to measure

The importance of premorbid personality, developmental stage, and adjustment to disability in post-injury behavioral disturbance is variable

AN INTEGRATED APPROACH

DEFINE THE PROBLEM

- Seek interdisciplinary consensus on an operational definition of the problem

SEARCH FOR CAUSATIVE FACTORS

- Collect baseline data on the severity of the problem
- Identify environmental contexts in which the behavior occurs, and the way in which others respond to its occurrence
- Identify neurobehavioral factors (from imaging studies, neuropsychological evaluations, etc.) which may directly contribute to the behavior

CAUSATIVE FACTORS (cont.)

- Identify neuropsychological factors that may contribute indirectly by increasing frustration, limiting adaptive ways of meeting needs, etc.
- Identify neuropsychological strengths which can be mobilized
- Screen for medications which may adversely affect the behavior or the patient's ability to exert control
- Characterize premorbid personality, coping style, family dynamics, developmental stage, adjustment to disability

TREATMENT PLANNING

Design initial interdisciplinary treatment, trying to implement 1 major intervention at a time, e.g.:

- Remove potentially offending medications
- Alter the physical and social environment as feasible with respect to previously identified patterns
- Design successive behavioral demands which are graded with respect to the patient's individual pattern of deficits
- Identify reinforcers appropriate to the patient's value system and cognitive status

PLANNING (cont.)

- Identify compensatory interventions for the patient's contributing neuropsychological deficits, mobilizing cognitive strengths
- Provide supportive interaction, if feasible, to assist with developmental and adjustment issues
- Add medications which may assist in behavioral control

ASSESS RESPONSE TO TREATMENT

Evaluate follow-up behavioral data. If improvement fails to occur, consider:

- Consistency of program application
- Need for systems approach at the staff and family level

ASSESS (cont.)

Need to add additional interventions from treatment planning list:

- Medication ineffectiveness or adverse effects
- Failure to consider neuropsychological or behavioral variables in design of program

ASSESS (cont.)

If improvement occurs, consider:

- Generalization to family and other settings
- Gradual diminishing of the intensity of interventions
- ● Neuropsychological reevaluation following medication changes

ASSESS (cont.)

- ● Soliciting reports of medication effects on non-target behaviors
 - Placebo controlled trials to determine continued need for medication
- ● Ways to transfer control of the improvement to the patient &/or family

Summary

No single scientific domain addresses all aspects of behavioral rehabilitation after TBI

Behavior programming needs to consider the behavioral, neural, pharmacologic, and social aspects of the problem

Whatever treatment tools are chosen, objective data remains the mainstay for judging treatment effectiveness