Impact of Anxiety on Post-Hospital Traumatic Brain Injury Rehabilitation Outcomes: A Prospective Cohort Study

Gordon J. Horn, Ph.D./Deputy Director National Clinical Outcomes
Assistant Clinical Professor

Florida State University, College of Medicine

Frank D. Lewis, Ph.D./Director National Clinical Outcomes
Assistant Clinical Professor

Medical College of Georgia at Georgia Regents University
Disclosure Statements

Gordon J. Horn PhD. has no financial or non-financial interest to disclose.

Frank D. Lewis PhD. has no financial or non-financial interest to disclose.
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At the conclusion of this activity, the participant will be able to:

1. Understand the impact of anxiety on functional outcomes for Traumatic Brain Injury adults in post-hospital rehabilitation programs.
2. Understand the effectiveness of anxiety reduction by post-hospital neurorehabilitation programming.
3. The levels of anxiety differentially impact traumatic brain injury outcomes.
Data Collection

The Subjects were collected from...

23 residential post-hospital brain injury rehabilitation programs
13 states

Design...
Prospetive cohort pretest-posttest
Interventions

*Multidisciplinary* treatment by..

- Physicians
- Nursing
- Physical Therapy
- Occupational Therapy
- Speech Therapy
- Counseling/Psychology
- Case Management
- Life Skills Trainers
Total Study Sample

378 traumatically brain injured adults divided into 4 groups based on MPAI-4 anxiety ratings:

- No problem = 135
- Mild problem = 76
- Moderate problem = 102
- Severe problem = 65
Anxiety Groups (MPAI-4)

Groups based on Ratings

- No Anxiety: 36%
- Mild: 20%
- Moderate: 27%
- Severe: 17%
Methods – Outcome Measures

Mayo Portland Adaptability Inventory (MPAI-4)
29 items rated on a 5-point scale from no limitation (0, 1) to severe problem (5).

Raw scores converted to T-scores within 3 subscales: Abilities (physical, speech, & cognitive functioning), Adjustment (behavioral/ emotional functioning), & Participation (home and community skills toward independence).

The MPAI-4 Anxiety rating was also obtained.

The MPAI-4 was completed within 30 days of admission and at discharge for comparison.
Results

Repeated Measures MANOVA revealed a significant main effect for treatment $F(1,374)=419.62, p< .001$.

Each of the anxiety groups improved significantly from admission to discharge on the MPAI-4 T-scores.
The main effect for anxiety was significant across groups $F(3,374)=35.45, p<.001$.

Follow-up Bonferroni pair-wise comparisons demonstrated MPAI-4 T-scores at discharge at a higher level of impairment in the severe anxiety group than each of the other groups ($p<.001$).

Wilcoxon-Z post-hoc tests demonstrated the severe and moderate anxiety groups showed significantly reduced anxiety scores at discharge ($p<.001$).
Conclusions

Of 378 TBI participants, those that received the highest anxiety ratings at admission had the poorest overall functional outcomes at discharge.

The severe group showed significant reduction in anxiety ratings admission to discharge (mean of 4 vs. 2.58).

Even mild to moderate levels of anxiety was shown to mitigate functional gains achieved in post-hospital rehabilitation programs.

All groups significantly improved from admission to discharge.
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