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

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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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Commercial Support was not received for this activity.

Learning Objectives

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…
        Prospective cohort pretest-posttest

Interventions

Multidisciplinary treatment by..

      Physicians
      Nursing
      Physical Therapy
      Occupational Therapy
      Speech Therapy
      Counseling/Psychology
      Case Management
      Life Skills Trainers

Methods

Total Study Sample

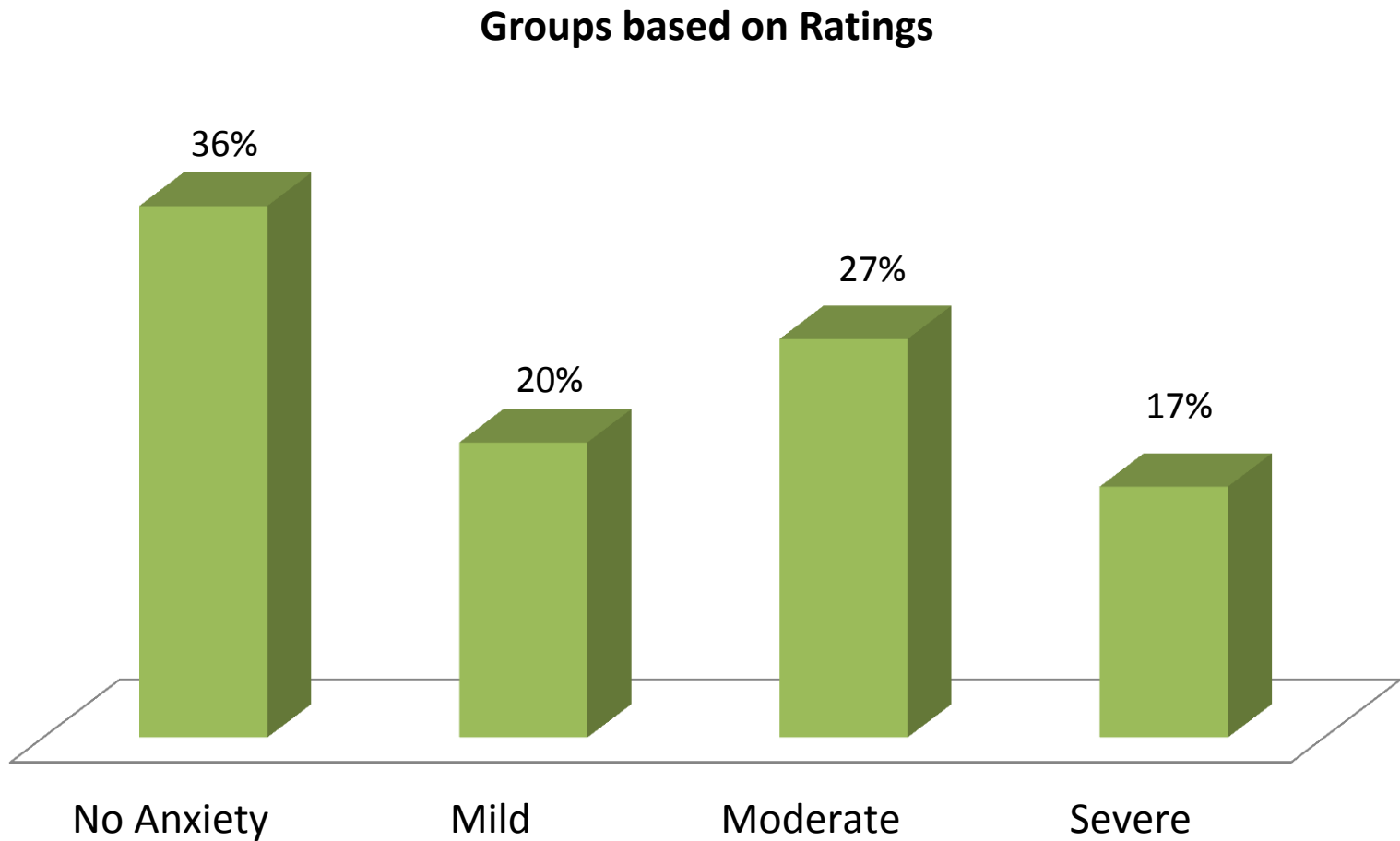378 traumatically brain injured adults divided into 4 groups based on MPAI-4 anxiety ratings:

No problem = 135
Mild problem = 76
Moderate problem = 102
Severe problem = 65

Anxiety Groups (MPAI-4)

Groups based on Ratings

| No Anxiety | Mild | Moderate | Severe |
| 36% | 20% | 27% | 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.

Results

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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