

Resource Facilitation: Evidence-Based Vocational Rehabilitation for Acquired Brain Injury

**Resource Facilitation Regional Conference
2016**

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First Randomized Controlled Trial of Resource Facilitation

(Trexler, Trexler, Malec et al., (2010) JHTR, 25; 440-446)

- 23 people with acquired brain injury recruited from RHI (12 RF, 11 Con)
- Six months of Resource Facilitation (Connors, 2001)
- Team= Neuropsychologist, VR TBI Specialist, Resource Facilitator, BI Therapist

Table 3: Diagnoses by groups

	Diagnosis				
	TBI	ICH	Stroke	Other	Total
Control	4	3	3	1	11
Treatment	3	4	3	1	11
Total	7	7	6	2	22

Results

- No differences between RF and Control groups for:
 - Age
 - Sex
 - Education
 - Severity of cognitive impairment
 - Diagnosis (TBI, stroke, etc.)

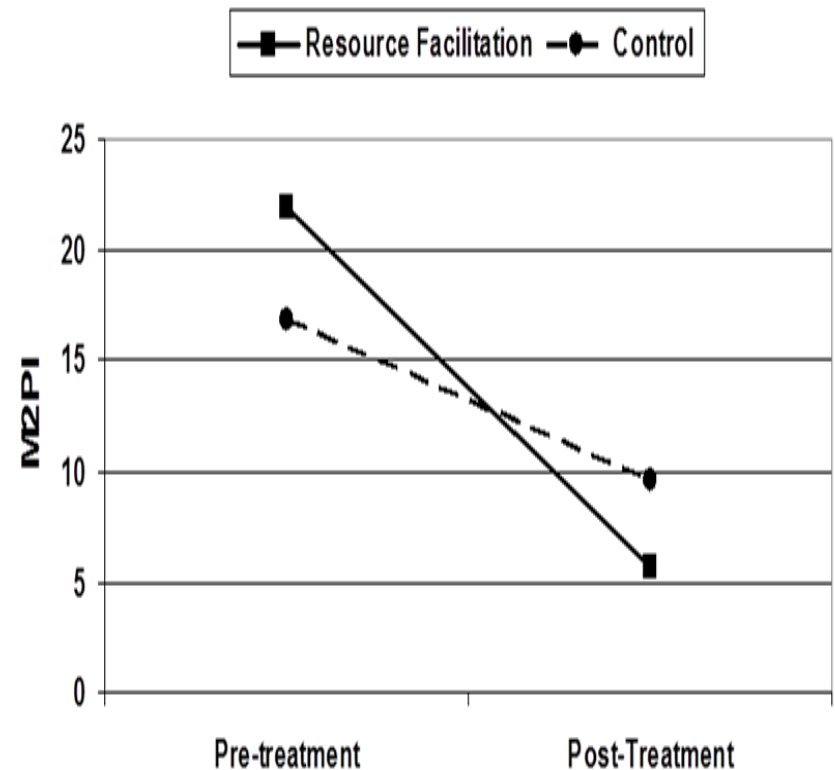
Results

- 64% of the RF group was employed at follow-up compared to 36% of the control group (Wald-Wolfkowitz $Z = -3.277$, $p < .0001$)
- Participation increased significantly for both groups ($F = 60.65$, $p < .0001$), but the interaction between groups and time demonstrated greater improvement for the RF group relative to controls ($F = 9.11$, $p < .007$).

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Figure 1: M2PI by Group and Time



Participation Index



Indiana Vocational
Rehabilitation Services
authorized a
Prospective Clinical Trial in
2011

Prospective Clinical Cohort Study of Resource Facilitation

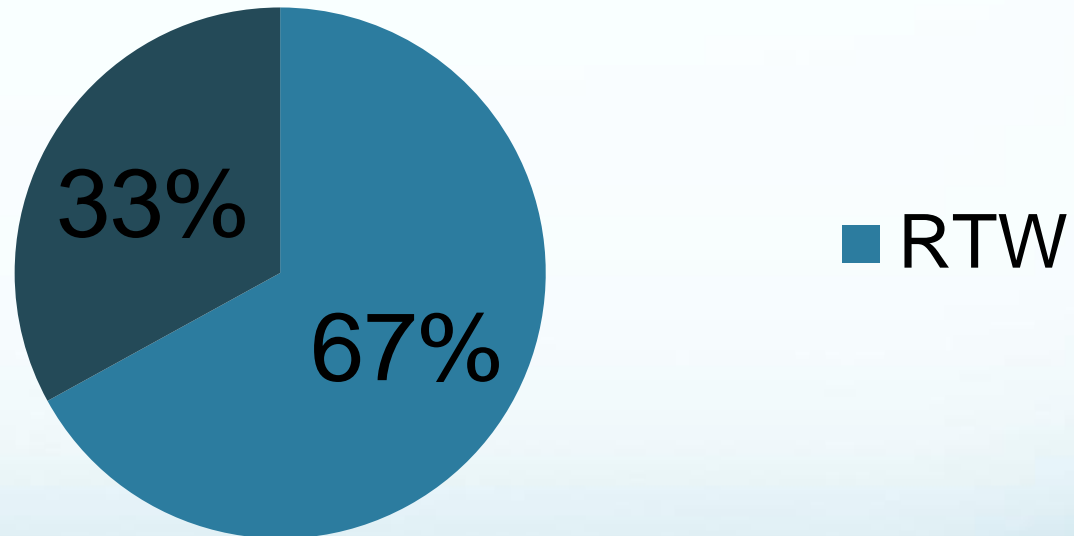
- 161 patients initiated services
 - 25 never started services
 - 10 did not finish services (moved, expired, changing goals)
 - 57 cases are still active (at time of analyses)
- 69 cases analyzed

Sample Demographics

- Time since injury was on average 9.28 years
- Average age for this sample was 38 years
- 78% male
- 53.8% of the sample had greater than a high school level of education
- Predominantly white

Results

- 67% returned to work or school



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research note



Potential Economic Impact of Resource Facilitation for
Post-Traumatic Brain Injury Workforce Re-Assimilation

Economic Impact Study

(Reid, McGeary & Hicks, 2011)

- Total Economic Impact in Lost Wages (Annual)
 - \$31,017,775
- Does not include annual losses
 - to business (\$10 million)
 - personal tax revenues (\$4.8 million)
 - Fringe benefits, Medicare, Medicaid, Disability
- Based on 64% RTW

ACRM

AMERICAN CONGRESS OF
REHABILITATION MEDICINE



Archives of Physical Medicine and Rehabilitation

journal homepage: www.archives-pmr.org

Archives of Physical Medicine and Rehabilitation 2016;97:204-10



ORIGINAL RESEARCH

Replication of a Prospective Randomized Controlled Trial of Resource Facilitation to Improve Return to Work and School After Brain Injury



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Randomized Controlled Trial 2

(Trexler, Parrott and Malec, Archives of PMR, 2016)

- Replication Study with larger sample size and longer treatment duration
 - 44 people with acquired brain injury recruited from RHI (22 RF treatment, 22 Control)
 - 15 months of Resource Facilitation Services

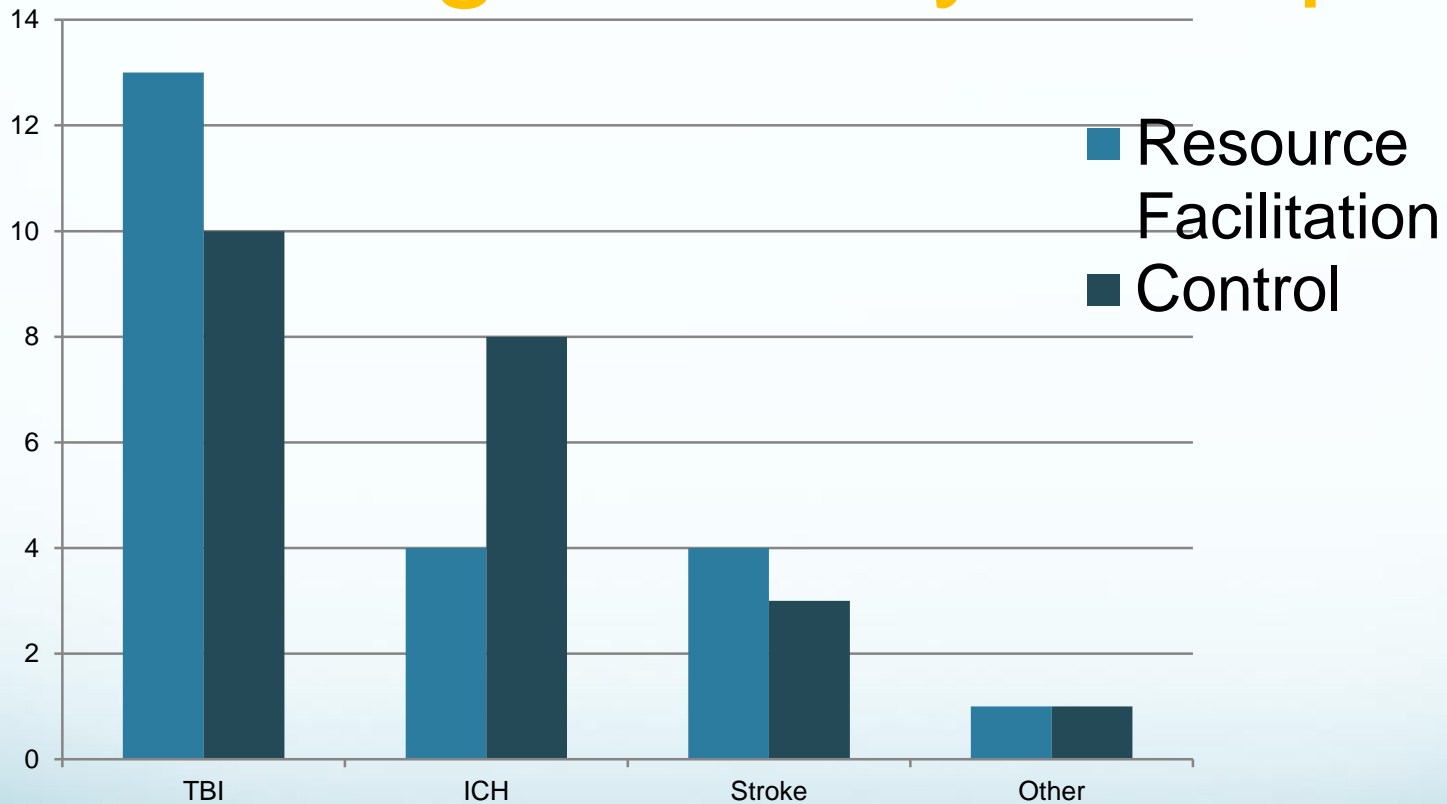
Sample Demographics

- On average, patients were 64 days post injury
- Average age was 37 years
- 62% Male
- 13.62 average years of education
- Predominantly white

Results

- Similar to RF 1, no differences between RF and Control groups on demographic variables
 - Age
 - Sex
 - Education
 - Time since injury
 - Diagnosis
- Significant group differences were found on VIQ WAIS III.

Diagnoses by Group

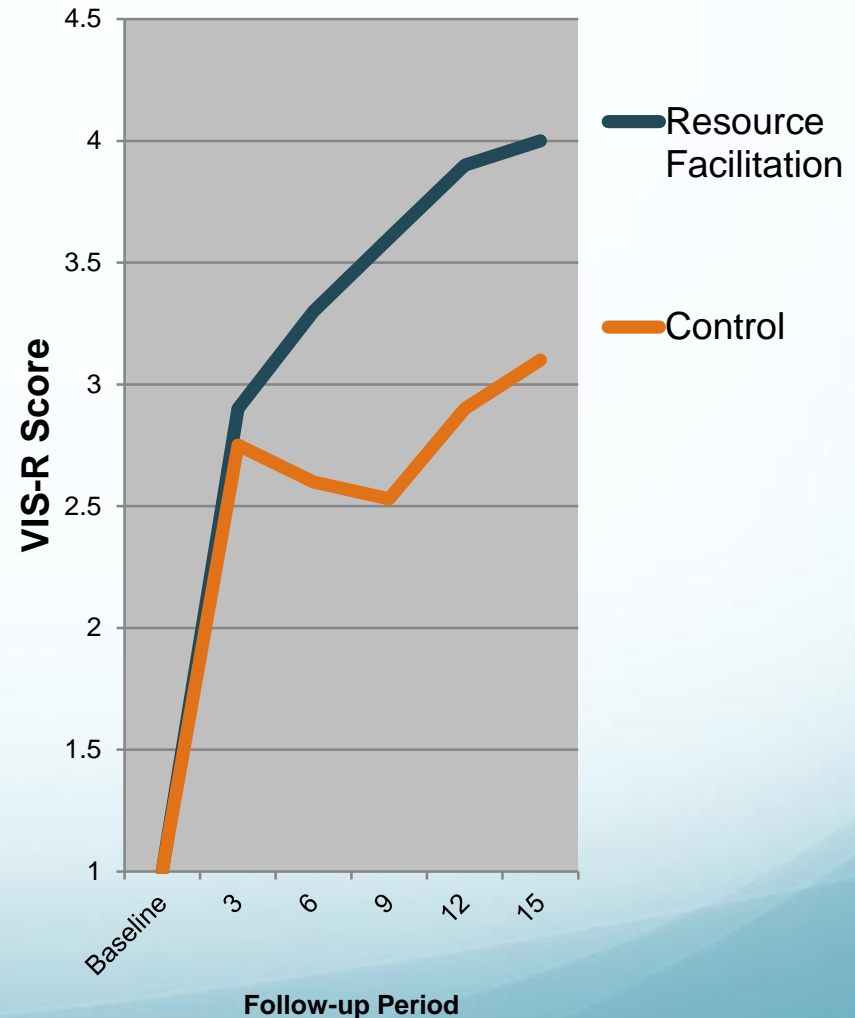


Vocational Independence Scale-R

5. Competitive: Community-based work without external supports for more than 15 hours/week. *Full-time school enrollment without external supports.*
4. Transitional: Community-based work with temporary supports (eg. job coach, reduced hours) fewer than 15 hours/week. *School enrollment with temporary supports or less than full-time student course load.*
3. Supported: Community-based work, *including volunteering*, with permanent supports. *School enrollment with permanent supports.*
2. Sheltered: Work in a sheltered workshop
1. Unemployed/*not in school*

VIS-R by Group

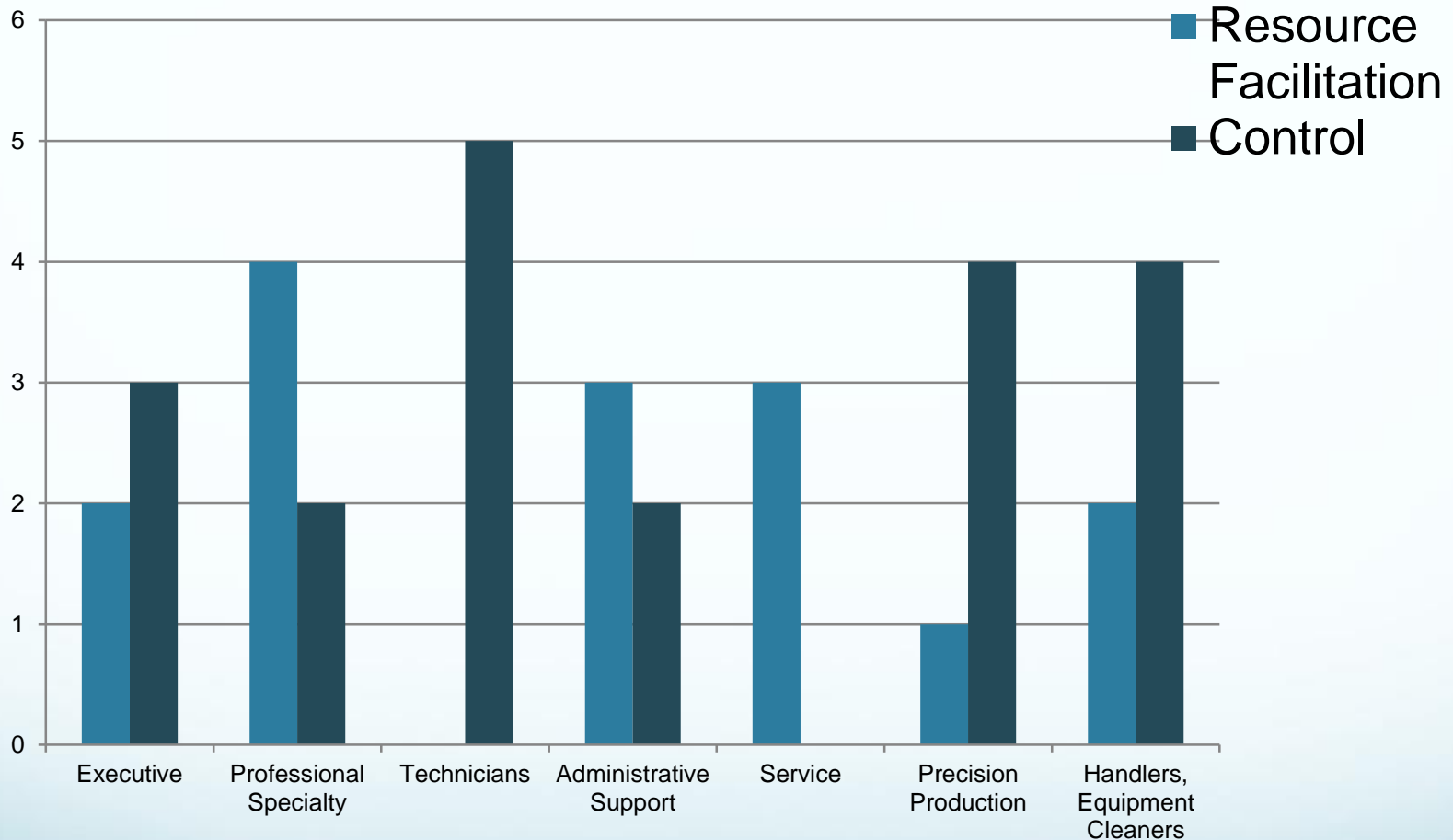
- Significant group by time interaction ($p = .027$)
- On average, the treatment group was 0.13 points higher than the control group on the VIS-R
- On average, the treatment group improved 0.17 points at each measurement while the control group only improved by 0.10 points



Results: Community-Based Work

- The odds ratio from the logistic regression found that RF participants were 7.0 times more likely to participate in productive community-based work than the control group.
- Relative risk analysis showed that the risk of no productive community-based work was 75% higher in the control group than the treatment group

Types of Jobs by Group



2014 Policy Decision

Based on the 2 RCT's, Prospective Clinical Cohort, and the Economic Impact Study, Indiana Vocational Rehabilitation Services decides to provide resource facilitation services to all of Indiana for

- People with acquired brain injury and
- Who want to return to work or school that will lead to return work

Resource Facilitation Growth: 2009-2015



Begin State-wide Roll-Out Early 2014

2013 Clinical Trial

2009 RCT's

New Prospective Clinical Cohort (June, 2016; n = 141)

Results

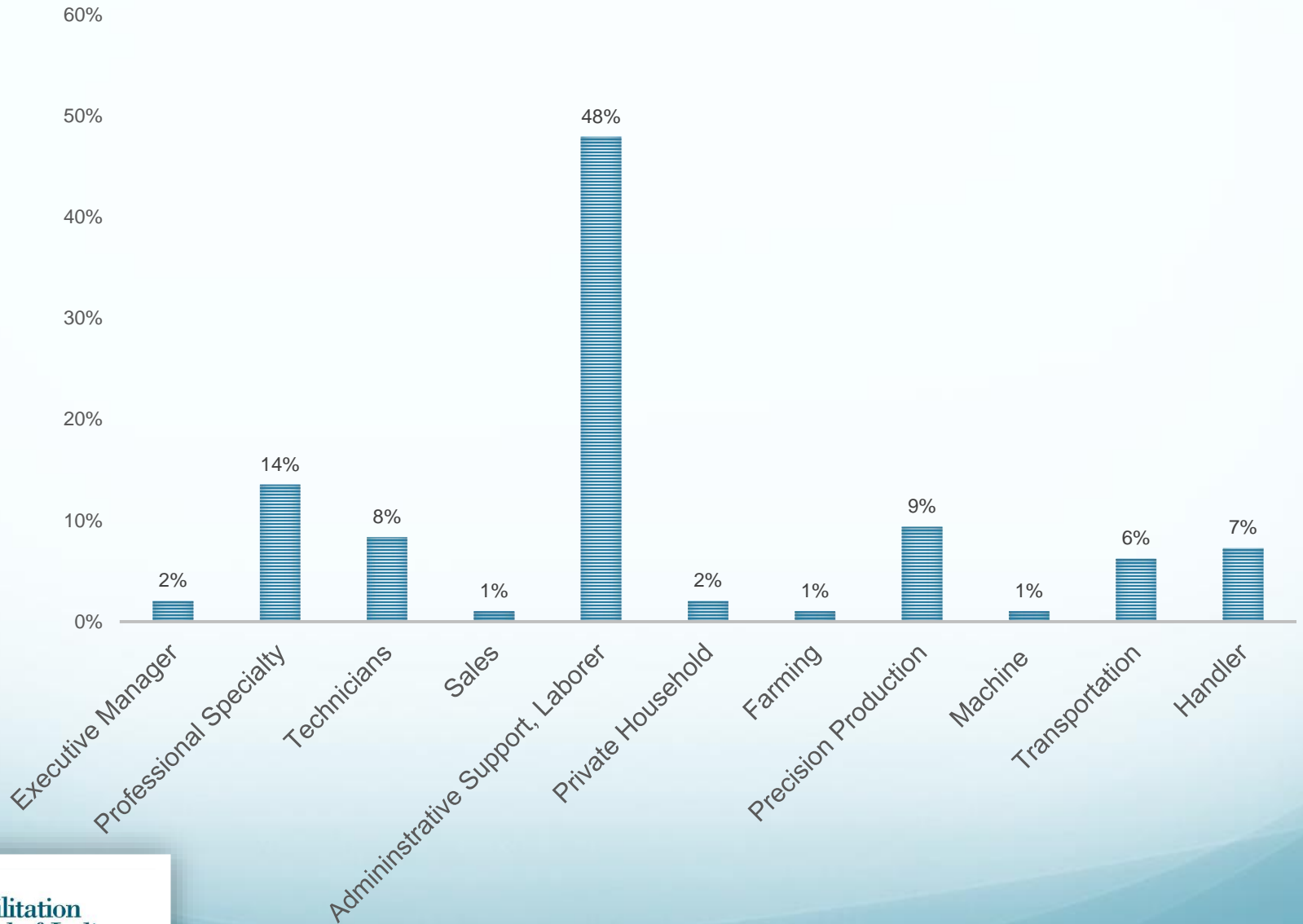
Variable	Mean (sd)
Age	38.97 (13.87)
MPAI Participation Index	43.71 (7.88) [moderate disability]
Time Since Injury (Years)	10.10 (11.25)
% Male	63.8%
Years of Education	13.34 (2.34)

Results

70% Successfully Placed in
Competitive Employment

Mean hours per week = 25

OCCUPATIONAL CATEGORIES FOR SUCCESSFULLY CLOSED CASES



Activities of Daily Living Scale

- Self Care Activities
- Household Care
- Employment and Recreation
- Shopping and Money Management
- Travel
- Communication
- Total

Results demonstrated a statistically significant decrease in the reported amount of assistance required to complete activities of daily living after RF ($t=5.35, p=.000$).

- Johnson, N., Barion, A., Rademaker, A., Rehkemper, G., & Weintraub, S. (2004). The Activities of Daily Living Questionnaire: a validation study in patients with dementia. *Alzheimer disease & associated disorders*, 18(4), 223-230.

Survey of Unmet Needs and Service Use

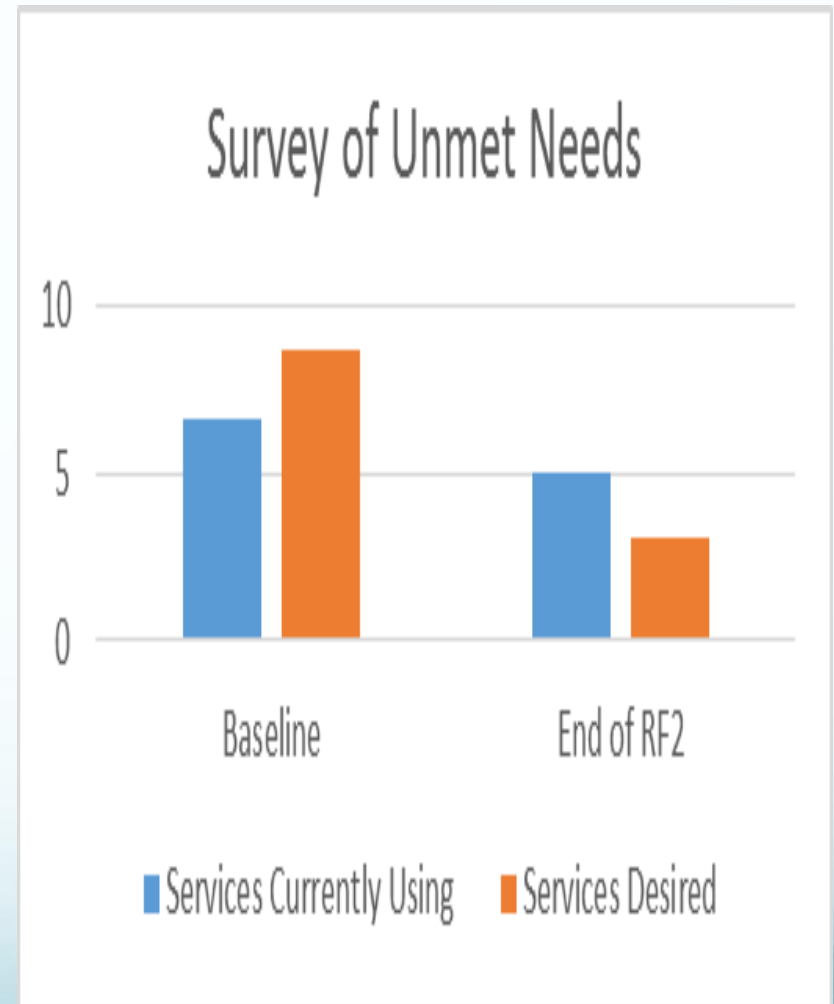
Heinemann, A.W. et al. (2002). Measuring unmet needs and services among persons with traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*, 83, 2052-1059

- Developed specifically for brain injury
- Variety of instrumental and service needs
- Addresses both what they are receiving and perceived needs

Receive	Need/
help	want
now	help
_____ traveling in my community	_____
_____ finding housing that is affordable and accessible	_____
_____ controlling alcohol and/or drug use	_____
_____ improving my memory, solving problems better	_____
_____ controlling my temper	_____

Survey of Unmet Needs

- Number of services used declined significantly from baseline to discharge ($t=2.83$, $p=.005$).
- Desired services declined significantly from baseline to discharge ($t=13.53$, $p=.000$).
- Examples of needs that were met through RF:
 - controlling alcohol and/or drug use,
 - increasing independence in eating, dressing, and bathing, and
 - finding housing that is affordable and accessible.

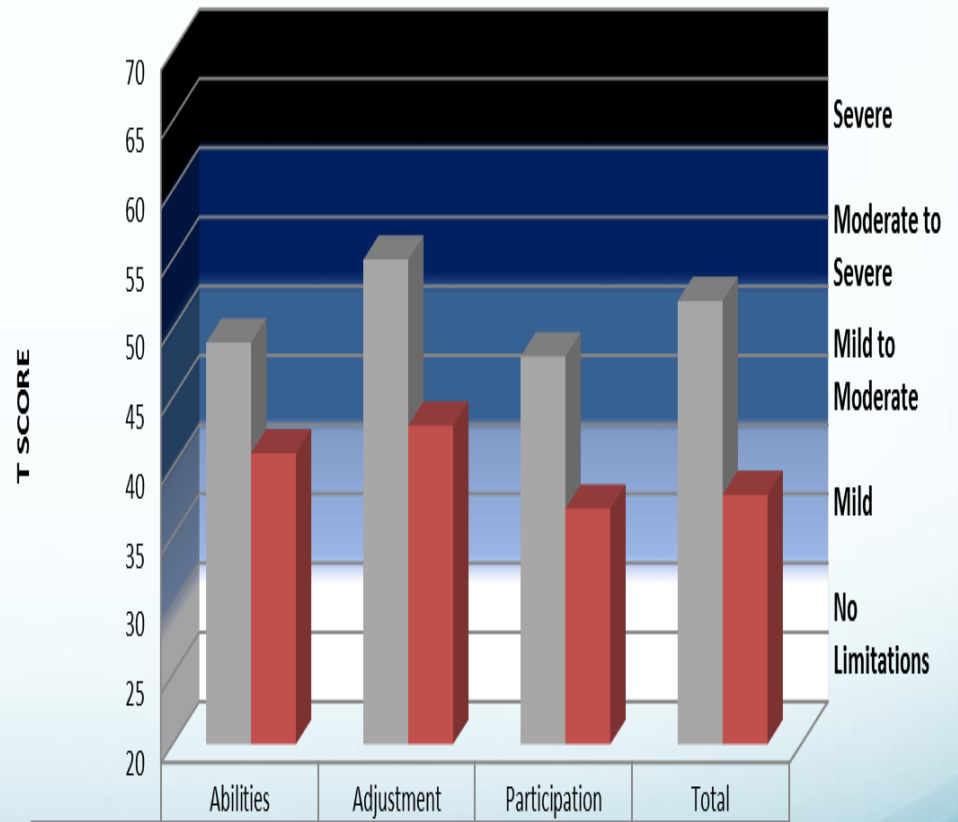


Mayo-Portland Results

MPI-4 results show a significant decline in level of disability across all subscales:

- abilities (e.g., mobility, memory),
- adjustment (e.g., depression social interaction), and
- participation (e.g., managing money, transportation) after RF ($t=4.07$, $p=.000$).

Mayo-Portland Adaptability Inventory



Results Across RCT's and Prospective Clinical Cohorts

	Present Sample	RCT 1 (Treatment Group Only)	RCT 2 (Treatment Group Only)	Prospective Clinical Cohort
Sample Size	137	12	22	69
Age	37.27 (15.43)	43.18 (11.97)	33.00 (10.83)	37.46 (15.86)
% Non-White	12	0	5	5.6
% Male	64	55	62	78
Years of Education	13.19 (2.14)	13.27 (2.10)	13.75 (1.94)	14.89 (15.86)
Time Since Injury (days)	3482 (4055) [years: 9.54 (11.11)]	64.50 (46.93)	63.21 (19.59)	3388 (3369) [years: 9.28 (9.23)]
% Employed Pre-Injury	67	100	100	59
MPAI Participation Index (T-Scores)	51.0 (10.57) (moderate)	63.90 (5.20) (severe)	52.59 (8.74) (moderate to severe)	49.28 (5.92) (moderate)
Employment/School Outcomes	69%	64%	69%	67%

Brain Injury takes a Village

