State of the Science Conference

Knowledge Translation for Employment Research

Hosted by SEDL's Center on Knowledge Translation for Employment Research (KTER Center)

SEPTEMBER 16–17, 2014

Welcome!

Session 1: Focus on Consumers/Individuals with Disabilities *(12-2:10 PM)*

Break: 2:10 – 2:50 PM

Session 2: Focus on Employers/Business *(2:50-5 PM)*

www.kter.org | www.vcu.edu

This presentation was developed for grant number H133A100026 from the National Institute on Disability and Rehabilitation Research (NIDRR), Office of Special Education and Rehabilitative Services (OSERS), U.S. Department of Education. However, the contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the federal government.

Review of Day 1

- Overview of the KTER Center
- Welcome from NIDRR Director, John Tschida
- Video from Senator Tom Harkin
- Policymaker session and discussion
- VR Professional session and discussion

Day 2 Overview

- Consumers/Individuals with Disabilities
  - James Krause of Medical University of SC
  - Fred Schroeder, National Rehabilitation Association
- Employers/Business
  - Kathleen Murphy and Steven Boydston, SEDL
  - Rebecca Salon and Brittany Taylor, the LEAD Center
  - Panelists: Mark Williams, Arun Karpur, Anne Miano

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Consumers/Individuals with Disabilities

Facilitator: Valerie Brooke, VCU

Presenter: James S. Krause, MUSC

Response: Fredric Schroeder, National Rehabilitation Association

Research Report: Katherine Inge, VCU

September 17, 2014

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Agenda

12:05 – 12:15	Session overview and introductions – Valerie Brooke (VCU)
12:15 – 12:55	"Beyond 90 Days Successful Employment after Disability" – James Krause (Medical University of South Carolina)
12:55 – 1:05	BREAK
1:05 – 1:30	Response – Fredric Schroeder (National Rehabilitation Association)
1:30 – 1:45	KTER Consumer Research Report – Katherine Inge (VCU)
1:45 – 2:00	Q and A – Facilitator, Valerie Brooke
2:00 – 2:10	Wrap Up / Consumer session takeaway message – Valerie Brooke

Guiding Questions

1. What are some strategies for including stakeholders (people with disabilities) in rehabilitation research?
2. How do you maximize research relevance in order to enhance knowledge translation among stakeholders?
3. What are some strategies for making research findings more accessible?

James S. Krause, PhD

- **"Beyond 90 days successful employment after disability: A systematic approach to investigating employment outcomes throughout the work life cycle"**
- The Medical University of South Carolina, College of Health Professions
- Associate Dean for Research
- Director, Center for Rehabilitation Research in Neurological Conditions

Beyond 90 Days
Successful Employment after Disability:

A systematic approach to investigating employment outcomes throughout the work life cycle

James S. Krause, PhD

Acknowledgement

- The contents of this webcast were developed under grants from the Department of Education, NIDRR grant numbers H133A120122 and H133B130011. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.
- H133A120122, entitled "Successful employment and quality work life after severe disability due to SCI"
- H133B130011, entitled "Successful employment and quality work life after severe disability: Comparison of predictive models with multiple sclerosis and spinal cord injury"

Purpose

Our purpose is to describe our program of research, entitled *Beyond 90 Days: Successful Employment after Disability*.

Objectives:

- To describe the philosophy of the program of research.
- Present an overview of examples of work already conducted.
- Describe two studies in progress with spinal cord injury (SCI) and multiple sclerosis (MS) that utilize the successful employment framework.

Employment and Disability

- Employment is of great importance to adult life, including that of people with disabling conditions.
- Tangible benefits include income and benefits such as health insurance.
- Intangible benefits relate to psychological adaptation and purpose in life.
- The onset of a disabling condition presents significant challenges to maintaining employment or to obtaining new employment.

Rehabilitative Issues in Employment

- The Federal government and state governments have taken leadership roles in promoting employment outcomes after the onset of a disabling condition or among youth with disabilities who are transitioning to adulthood.
- The nature of the support may include retraining and varying levels of education. Education is the single most important factor to multiple employment outcomes.
- Support varies substantially between individuals and between states.
- Typically, cases are closed by Vocational Rehabilitation (VR) after the individual has been employed for 90 days (although some support services may remain). These closures are deemed successful.

Research on Employment and Disability

- The majority of research on employment among those with disabling conditions focuses on current employment rates or case closures by VR.
- A significant number of employment studies use existing data.
- Model Systems represent networks of care for conditions such as SCI or traumatic brain injury (TBI) and data from the Model Systems has been widely used to identify factors related to current employment status among individuals with a particular clinical condition.
- VR case closure data has been widely used to determine outcomes of those receiving VR services.

Limitations of Existing Research

- Studies using existing data become narrow in focus, with emphasis driven more by the availability of the data as opposed to the importance of the scientific question.
- Identification of predictor variables is typically highly limited and generally focused more on biographic and disability characteristics, rather than person characteristics, such as personality, vocational interests, or vocational needs; or environmental characteristics.
- Outcome variables often do not adequately quantify important characteristics of employment, such as hours per week working, pay rates, and earnings.
- They are also limited in terms of measurement of quality of employment and are typically focused on a narrow range of time.

Philosophy

The philosophy of *Beyond 90 Days: Successful Employment after Disability* is that employment after disability must be systematically investigated throughout the work life cycle, with attention to quality outcomes, rather than the focus on current employment status or case closures.

The challenges for those with disabilities begin after the first 90 days when services are typically terminated, and return or transition to employment represent only the first step to successful quality employment.

Until research and practice focus on a wider array of outcomes, people with disabling conditions, even when employed, will lag behind the general population in (1) quality of employment, (2) quality of life, and (3) longevity.

Our mission is to use a systematic approach to investigating employment outcomes throughout the work life cycle as a prelude to intervention.

Examples from Work Already Completed

- We summarize three examples from work already completed, using primary data collection and the diversity of predictors, including the use of two-step models.
  - Time from injury onset until first post-injury job and first full-time job after SCI.
  - Retaining employment after SCI.
  - Earnings after SCI.
- These models demonstrate a statistical approach that quantifies the likelihood of an outcome in terms of probability or another metric, such as years or earnings.

Delayed Entry into Employment

- Our purpose was to identify factors associated with times between onset and first post-injury job, using a larger participant sample and more diverse predictor variables than in previous studies.
- Participants = 1,543 adults with SCI who were between ages 18-65.
  - 52% employed at some time since injury
  - 38% had worked full-time
  - 71% of those who worked were working full-time by 5 years post-injury
  - 91% by 10 years post-injury

Krause, J. S., Terza, J.V., Saunders, L. L., & Dismuke, C. E. (2010). Delayed entry into employment after spinal cord injury: factors related to time to first job. Spinal Cord, 48, 487-491. doi: sc2009157

Cumulative Percentage of Employed Participants as a Function of Years Post-Injury among those Employed Post-SCI

Average Derivative for Age at Injury Variable and Attributable Differences for Binary Variables for Time to First Job of Any Type

	10-year Censoring		
Variable	Attributable Diff	t-stat	p-value
Biographic Characteristics			
Age at injury	0.14	0.02	0.98
Non-Caucasian (vs. Caucasian)	1.26	2.38	0.02
Male (vs. Female)	-0.23	-0.61	0.54
Education (vs. < High School)			
High school-Associates	-1.50	-3.13	0.00
Bachelors-Graduate	-2.98	-7.53	0.00
Injury Severity (vs. Ambulatory)			
C1-C4, Non-ambulatory	3.72	2.93	0.00
C5-C8, Non-ambulatory	3.78	6.00	0.00
Non-cervical, Non-ambulatory	1.70	4.00	0.00
Employment Characteristics			
Return to same company	-4.95	-14.84	0.00
Pre-injury Employment in Management	-1.60	-1.86	0.06

Study of Earnings after SCI

The purpose of this study was to identify differences in conditional and unconditional work-related actual earnings after SCI attributable to biographic, injury, educational, and work-related factors.

Krause, J. S., Terza, J.V., & Dismuke, C. (2008). Earnings among people with spinal cord injury. Archives of Physical Medicine and Rehabilitation, 89, 1474-1481. doi: 18674983

Relative Frequencies of Earnings Levels

Range	Frequency	Relative Frequency
0 (not working)	866	0.668
< $10,000	77	0.059
$10,000 - 15,000	29	0.022
$15,000 - 20,000	23	0.018
$20,000 - 25,000	25	0.019
$25,000 - 35,000	73	0.056
$35,000 - 50,000	69	0.053
$50,000 - 75,000	83	0.064
>$75,000	51	0.039
Total	1296	1.000

Part 1: Attributable Differences for Binary Variables Using Probit Results (Probability of working)

Variable	Attributable Diff	t-stat	p-value
Sex	0.09	3.79	0.00
Race	0.17	6.23	0.00
Age at the Study (35-49)	0.01	0.24	0.81
Age (≥50)	-0.09	-3.14	0.00
Severity	-0.06	-2.61	0.01
Ambulatory Status	0.11	3.81	0.00
Working at injury	-0.01	-0.30	0.77
Some Education Beyond HS (13-15 years)	0.17	6.42	0.00
College	0.42	14.21	0.00
Return to same job	0.27	6.02	0.00
Return to different job, same company	0.20	3.72	0.00

Part 2: Attributable Differences for Binary Variables Using Exponential Regression Results

Variable	Attributable Diff ($)	t-stat	p-value
Sex	**11,031**	**3.09**	**0.00**
Race	**12,602**	**2.67**	**0.01**
Age at the Study (35-49)	5,956	1.32	0.19
Age (≥50)	-1,435	- 0.24	0.81
Severity	-5,834	- 1.72	0.08
Ambulatory Status	4,829	1.13	0.26
Working at injury	-2,987	- 0.66	0.51
Some Education Beyond HS (13-15 years)	6,802	1.27	0.21
College	**28,299**	**5.82**	**0.00**
Return to same job	5,923	1.01	0.31
Return to diff job, same comp	-1,501	- 0.24	0.81

Study of Labor Force Participation

- Our purpose was to identify demographic, injury, educational and vocational factors associated with labor force participation (LFP) after SCI.
- *Post-injury LFP* was defined as having been gainfully employed since the onset of SCI, whereas
- *Current LFP* was defined as being gainfully employed at the time of the study (a measure of job retention).
- Participants = 1,398 adults with SCI who were under age 65.
  - 766 employed at some time since injury
  - 485 currently employed

Krause, J. S., Terza, J.V., & Dismuke, C. (2010). Factors associated with labor force participation after spinal cord injury. Journal of Vocational Rehabilitation, 33, 89-99.

Distribution of Pre- and Post-injury Occupations

Employment Type	Pre-Injury (n=1109)	Post-Injury (n=668)
	%	%
Management professional	20.7	**56.6**
Service	**13.8**	4.9
Sales and office	21.6	28.0
Natural resources, construction, & maintenance	**25.6**	6.6
Production, transportation, & material moving	**18.3**	3.9

Note: Only those who had been employed at some time are included.
Some occupations could not be classified.

Part 1: Post-injury LFP – 1st Part of the Two-Part Model

Variable	Attributable Diff	t-stat	p-value
Age at injury	-0.01	-7.81	<.01
Sex (if Male = 1)	0.06	2.34	0.02
Race (if Caucasian = 1)	0.12	4.09	<.01
Education			
High School: Pre-injury	0.14	4.21	<.01
Bachelors or higher: Pre-injury	0.18	5.01	<.01
High School: Post-injury	0.20	4.90	<.01
Bachelors or higher: Post-injury	0.36	12.37	<.01
Injury Severity			
Ambulatory	0.29	9.22	<.01
C5-C8, non-ambulatory	0.11	2.83	<.01
Non-cervical, non-ambulatory	0.20	5.90	<.01

Part 2: Current LFP – 2nd Part of the Two-Part Model

Variable	Attributable Diff	t-stat	p-value
Age at injury	0.00	-0.16	0.87
Sex (if Male = 1)	**0.11**	**2.86**	**<.01**
Race (if Caucasian = 1)	**0.17**	**3.11**	**<.01**
Education			
High School: Pre-injury	0.06	0.93	0.35
Bachelors or higher: Pre-injury	-0.02	-0.32	0.75
High School: Post-injury	0.03	0.45	0.65
Bachelors or higher: Post-injury	**0.15**	**3.82**	**<.01**
Injury Severity			
Ambulatory	**0.13**	**2.10**	**0.04**
C5-C8, non-ambulatory	-0.05	-0.77	0.44
Non-cervical, non-ambulatory	-0.01	-0.17	0.86
Post-injury Employment Type			
Management professional	**0.24**	**5.02**	**<.01**
Service	0.09	1.10	0.27
Sales and office	**0.15**	**3.56**	**<.01**
Natural resources, construction, maintenance	0.08	1.09	0.28
Returned to same job	0.05	1.02	0.31
Returned to different job, same company	0.00	-0.02	0.98

Current Programs of Research on Successful Employment: SCI and MS

Program 1

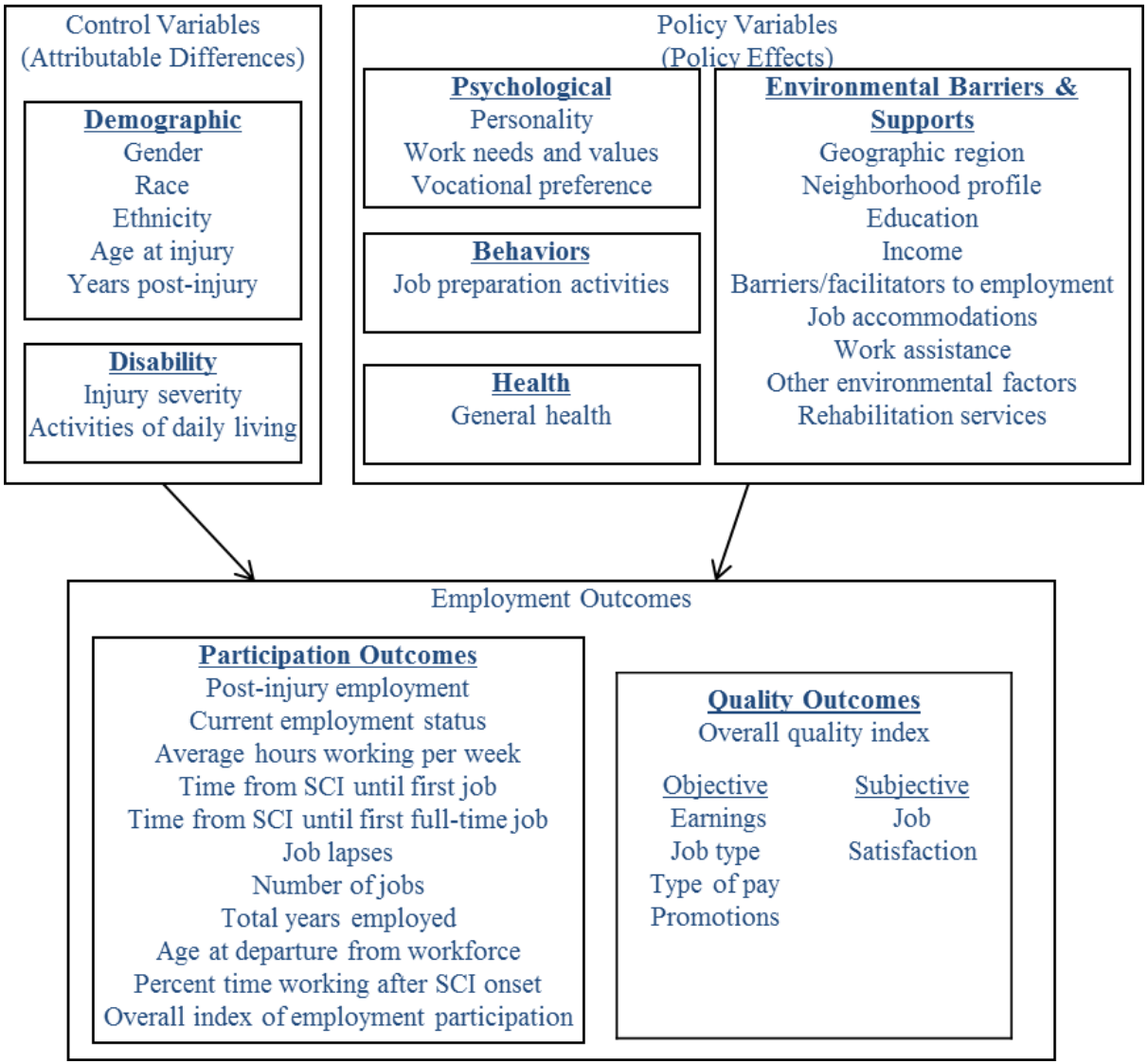
Successful employment and quality work life after severe disability due to SCI.

(Disability Rehabilitation Research Project)

Methodology

- Two studies:
  - Study 1 is a qualitative study conducting three focus groups at two sites (MN and GA) for people with SCI to discuss their work experiences. Total focus groups = 6, n = 48 (completed)
  - Study 2 is a quantitative study that will identify predictive factors with diverse employment outcomes for individuals with SCI (n = 2500).

Labor Participation Model for Study 1



Measurement of Overall Participation in Employment

Measure	Description
Post-injury employment	Ever had post-injury job, regardless of current status
Current employment status	Employed at the time of study
Average hours working per week	Average number of hours working per week at the time of survey from all jobs.
Time from SCI until first job	Time from injury until first post-injury job
Time from SCI until first full-time job	Time from injury until first post-injury full-time job
Job lapses	Number and length of job lapses defined by having terminated employment & having returned to work
Number of jobs	Total number of jobs since the time of injury
Total years employed	Total years including all jobs, part-time and full-time
Age at departure from workforce	Age at departure from workforce
Percentage of time working post-injury	Ratio of time working post-injury/time post-injury
Overall index of employment participation	To be developed based on the combination of all parameters.

Measurement of Quality Indicators of Employment

Measure	Description
Objective	
Earnings	Broken down into eight categories
Job type	Assessed through job title and description of duties, and categorized according to Bureau of Labor and Statistics; management/ professional, service, sales and office, natural resources/ construction/maintenance, production/transportation/material moving
Type of pay	Salaried vs. other
Promotions	Number of awards, promotions, or pay raises
Subjective	
Job satisfaction	Job Satisfaction Survey – 36-item survey assessing; pay, promotion, supervision, benefits, rewards, operating procedures, coworkers, nature of work, communication Minnesota Satisfaction Questionnaire – provides specific information on what aspects of a job the person finds regarding

Program 2

Successful employment and quality work life after severe disability: Comparison of predictive models with MS and SCI.

(RRTC on employment after physical disability, Virginia Commonwealth University)

Background

- Two-thirds of individuals with MS still work at diagnosis (Roessler et al., 2003).
- As illness progresses, there is a sharp decline, with only 20-30% employed 15 years post-diagnosis (Fraser, Clemmons, & Bennett, 2002).
- Those with MS progress from active employment to short-term disability insurance, long-term disability insurance, and Social Security disability insurance at higher and faster rates than people with most other disabilities (Fraser, McMahon, & Dancyzk-Hawley, 2004).

Methodology

- Same approach (qualitative and quantitative) as the study on SCI.
- Approximately 1,050 people with physical disabilities resulting from MS will be recruited.
- Participants will be recruited through the MS clinic at Shepherd Center in Atlanta, GA.
- Data analysis will use combined data from the MS and SCI studies, systematically identifying similarities and differences in predictive factors and outcomes.

Future Applications

- Work toward maximizing employment outcomes among those with disabling conditions, rather than focusing on return to employment or transition only.
- Enhance prediction of changes in employment outcomes, which will allow for more accurate assessment of lifetime needs, such as is done in the life care plan.
- Develop equations which use weighted models for various outcomes that better determine the cost effectiveness of interventions to promote overall employment success.
- Development of the new metrics, such as earnings based contributions to taxes.

Dissemination/Knowledge - Translation Strategies

1. What are some strategies for including people with disabilities in rehabilitation research;
2. How to maximize research relevance in order to enhance knowledge translation among people with disabilities ;
3. What are some strategies for making research findings accessible.

Concluding Remarks

Thank you!

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Websites

www.longevityafterinjury.com
www.beyond90days.com (under construction)
www.facebook.com/longevityafterinjuryproject

BREAK

12:55 - 1:05 PM

After the Break

1:05 – 1:30	Response – Fredric Schroeder (National Rehabilitation Association)
1:30 – 1:45	KTER Consumer Research Report – Katherine Inge (VCU)
1:45 – 2:00	Q and A – Facilitator, Valerie Brooke
2:00 – 2:10	Wrap Up / Consumer session takeaway message – Valerie Brooke

Fredric Schroeder, PhD

- **Presentation Response**
- Recently appointed Executive Director
- National Rehabilitation Association (NRA)
- Former Commissioner of the Rehabilitation Services Administration (RSA)

KTER Consumers Research Report

- **The Effectiveness of Facebook to Increase the Use of Evidence-Based Research by Individuals with Traumatic Brain Injury**
- Research Team: Katherine Inge, Jay McLaughlin, and Carolyn Graham, VCU
- Presenter: Katherine Inge

Research Questions

1. Is Social Media, specifically a "secret" Facebook group led by a peer mentor, effective in increasing the knowledge and use of evidence-based research on supported employment by individuals with TBI?
2. What is the relationship between participant demographics and the effectiveness of the KT strategy to impact evidence-based employment knowledge and use by individuals with TBI?

Study Details

- Random control study
- Sample population
  - Traumatic Brain Injury Survivors
- Intervention
  - Facebook (Three months, daily interaction)
  - E-news (One per month, for three months)
- Data Collection

Facebook Details

- Group Leaders
  - Jay McLaughlin, TBI Survivor & Rehab Counselor
  - Dr. Katherine Inge
- Secret Facebook Group Details

Participant Details

- Demographics
- Use of Vocational Rehabilitation Services
- Use of Facebook
- Knowledge of Evidence-based Practices

Guiding Questions

1. What are some strategies for including stakeholders (people with disabilities) in rehabilitation research?
2. How do you maximize research relevance in order to enhance knowledge translation among stakeholders?
3. What are some strategies for making research findings more accessible?

- Q & A – Facilitator, Valerie Brooke
- Wrap up/Takeaway message – Valerie Brooke