

# **Results of a Multi-Site Clinical Trials Study of Employment Models for Mental Health Consumers**

**Judith A. Cook, Ph.D.**

*Professor & Principal Investigator*

*EIDP Coordinating Center*

*Department of Psychiatry, University of Illinois at Chicago*

**University of Illinois at Chicago, Department of Psychiatry  
National Research & Training Center on Psychiatric Disability**

**Funded by the Center for Mental Health Services  
Substance Abuse and Mental Health Services Administration**

# EIDP (1995-2003)

## Principal Investigators

- William McFarlane, MD, Maine Medical Center, Portland, ME
- Anthony Lehman, MD, University of Maryland, Baltimore, MD
- Kim Mueser, PhD, Dartmouth University, Hartford, CT
- Michael Shafer, PhD, University of Arizona, Albuquerque, NM
- Kathaleene Macias, PhD, Fountain House, Worcester, MA
- Paul Gold, Ph.D, Medical University of South Carolina, Sumter County, SC
- Marcia Toprac, TX Department of MH and MR, San Antonio, TX
- Laura Blankertz, PhD, Matrix Research Institute, Philadelphia, PA

## Coordinating Center

- Principal Investigator, Judith Cook, PhD, University of Illinois at Chicago
- Co-PI, Stephen Leff, PhD, Human Services Research Institute, Cambridge, MA
- Consumer Consortium Representative, Carolyn Kaufmann, PhD, University of Pittsburgh

## Federal Staff

- Government Project Officer, Crystal Blyler, PhD, Center for Mental Health Services, SAMHSA

# President's New Freedom Commission on Mental Health: Six Major Questions Regarding Employment & Income Supports

- What are the problems?
- Who is affected?
- What remedies should be pursued?
- How can employment & income supports be part of recovery?
- What can federal agencies do?
- What can other stakeholders do?

Employment & Income Support for People with Mental Illness, report prepared for the President's New Freedom Commission on Mental Health, Cook, JA, 2003

# Well-Documented Employment Barriers for Mental Health Consumers

- Consumers are Out of the Labor Force, Unemployed, or Underemployed
- The Majority Receive No Vocational Services, A Small Minority Receive Too Few, or Ineffective Services
- State-Federal Vocational Rehabilitation System Has Achieved Limited Effectiveness with this Constituency
- Necessary Secondary & Post-Secondary Education and Training is Lacking
- Labor Force Discrimination Hampers Careers
- Living in Poverty Inhibits Vocational Potential

\* \* \*

Employment & Income Support for People with Mental Illness, report prepared for the President's New Freedom Commission on Mental Health, Cook, JA, 2003

# People with Psychiatric Disabilities are Subject to the Same Labor Force

## Dynamics as the General Population

- Over the past several decades, people with disabilities have experienced the same labor market trends as the general population, *albeit in exaggerated form* (Yelin, 2001), including...
  - Increase in female/decline in male workers
  - Increase in young & middle aged workers/decline in older
  - Increase in workers with college degrees/decrease in those with less than high school education
  - Increase in service jobs/decrease in manufacturing jobs
  - Increase in part-time work
  - Unemployment rate fluctuations (ppl with disabilities do better in times of LF expansion, worse in LF contraction)

# Well-Documented Problems with Disability Income Supports

- Disability income is equivalent to poverty level income
- People with psychiatric disabilities are over-represented on the SSI/SSDI rolls; Less than 1% ever exit the rolls
- Linking disability income with health care coverage creates problems for beneficiaries attempting a return to employment
- Disability program rules and regulations constitute significant disincentives to work
- Recent legislation designed to remediate income support disincentives (ADA, TWWIA) is likely to have little impact for mental health consumers

\* \* \*

Employment & Income Support for People with Mental Illness, report prepared for the President's New Freedom Commission on Mental Health, Cook, JA, 2003

# EIDP Study Design

**A multi-center, longitudinal evaluation of employment interventions into which newly-enrolled participants were randomly assigned and followed for two years, with bi-annual in-person interviews, and ongoing employment and services data collection.**

## Centers

**Connecticut**

**Maryland**

**Pennsylvania**

**South Carolina**

**Arizona**

**Massachusetts**

**Maine**

**Texas**

# **Domains of the EIDP Common Protocol**

- **Demographic**
- **Residential Status**
- **Income Sources & Entitlements**
- **Physical & Cognitive Impairments**
- **Clinical & Medications**
- **Quality of Life**
- **Self-Esteem**
- **Social**
- **Work Motivation**
- **Vocational**
- **Services**
- **Cost**
- **Program Measure**

**Assessed bi-annually**

**Assessed ongoing**

**Assessed annually**

**Assessed at program maturity**

# **Primary Research Questions** **Addressed Today**

- 1. What is the relative effectiveness of different models of vocational rehabilitation in establishing competitive employment & other labor force outcomes?**
- 2. What service recipient characteristics are related to intervention effectiveness?**
- 3. What is the relative impact of amounts and types of services on employment outcomes?**

# Types of Vocational Models Tested

**Arizona:** *Supported Employment (SE)* vs. Services as Usual

**Connecticut:** *Individual Placement & Support (IPS)* vs. Services as Usual

**Maryland:** *Individual Placement & Support (IPS)* vs. Services as Usual

**South Carolina:** *Assertive Community Treatment + Individual Placement & Support (ACT+IPS)* vs. Services as Usual

**Pennsylvania:** *Long-term Employment Training and Supports (LETS)* vs. Services as Usual

**Maine:** *Employer Consortium & Family-Aided Assertive Community Treatment (FACT+Consortium)* vs. (FACT) only

**Massachusetts:** *ICCD Clubhouse* vs. Program of Assertive Community Treatment (PACT) Vocational Model

**Texas:** *Supported Employment and Employment Assistance through Reciprocity in Natural Supports (SE+EARNs)* vs. Supported Employment only

# Background Features of EIDP Participants (N=1648)

<b>Gender:</b>	<b>Male</b>	<b>53%</b>
	<b>Female</b>	<b>47%</b>
<b>Age:</b>	<b>Range</b>	<b>18-76 years</b>
	<b>Mean</b>	<b>38 years</b>
<b>Ethnicity:</b>	<b>Caucasian (Non-Hispanic)</b>	<b>48%</b>
	<b>African American</b>	<b>31%</b>
	<b>Hispanic</b>	<b>14%</b>
	<b>Asian</b>	<b>1%</b>
	<b>American Indian</b>	<b>3%</b>
	<b>Other</b>	<b>3%</b>

# **Background Features of EIDP Participants**

<b>Language of Origin:</b>	<b>English only</b>	<b>85%</b>
	<b>Non-English</b>	<b>15%</b>
<b>Highest Level of Education:</b>	<b>&lt; High School</b>	<b>34%</b>
	<b>High School</b>	<b>30%</b>
	<b>Some College</b>	<b>25%</b>
	<b>AA Degree</b>	<b>4%</b>
	<b>BA Degree</b>	<b>4%</b>
	<b>Some Graduate</b>	<b>2%</b>
	<b>Advanced Degree</b>	<b>1%</b>

# Background Features of EIDP Participants

**Married/Living as Married: 10%**

**Co-resident children < 18 years old: 22%**

**Baseline Residential Status:**

<b>Homeless</b>	<b>3%</b>
<b>Institution/Facility</b>	<b>14%</b>
<b>Assisted/Supported</b>	<b>10%</b>
<b>Supported/With Family</b>	<b>23%</b>
<b>Independent</b>	<b>50%</b>

# EIDP SSI/SSDI Beneficiary Status

<u>Baseline</u>		<u>24-Months</u>	
SSI Only	35%	SSI Only	37%
SSDI Only	25%	SSDI Only	28%
SSI & SSDI	12%	SSI & SSDI	16%
Neither	28%	Neither	19%

# DSM-IV Diagnoses

## Primary Diagnoses on AXIS I

Schizophrenia	31%
Schizoaffective	18%
Psychotic	3%
Depression	21%
Bipolar Disorder	16%
Dysthymia	2%
Substance Abuse	2%
Other	7%

## Secondary Diagnoses on AXIS I

Substance Abuse	64%
Post-Traumatic Stress	5%
Mood Disorder	5%
Other	14%
None	12%

# Psychiatric Hospitalization

## # Hospitalizations in

Lifetime:	range	0-100
	mean (median)	6 (4)

## # Months Hospitalized in

Lifetime:	range	0-336
	mean (median)	13 (4)

## # Months Since Most Recent

Hospitalization*:	range	0-437
	mean (median)	34 (14)

## Any Psychiatric Hospitalization in

6 Months Prior to Baseline:	24%
-----------------------------	-----

# Medication Information

**Proportion Currently Prescribed Medication: 96%**

**# of Psychiatric Medications:**

<b>none</b>	<b>4%</b>
<b>1</b>	<b>19%</b>
<b>2</b>	<b>34%</b>
<b>3</b>	<b>26%</b>
<b>4-5</b>	<b>16%</b>
<b>6 or more</b>	<b>1%</b>

# Co-Occurring Disabilities/Health Conditions

## Total Number of Conditions Reported:

None	60%
1	20%
2	11%
3+	9%

## Average Number of Conditions per Participant:

Mean (median)	.74 (0)
Range	0-12

## Conditions:

Specific Learning Disability	6%
IQ Score Below 70	6%
Prior MR/DD Services	3%
Borderline or Subnormal Intelligence	11%
Head Injury	11%
Spinal Cord Injury	3%
Seizure Disorders	6%
Hearing Impairment	2%
Visual Impairment	11%
Speech/Language Impairment	2%
Attention Deficit Disorder	4%
Chronic Medical Condition	2%

# Prior Work History

**% Holding Any Paid Job Prior to Study: 97%**

**Number of Jobs Held in 5 Years Prior to Study:**

none	33%
1	25%
2+	42%

**\* A third had done no paid work 5 years prior to study entry**

**Number of Months at Paid Work in 5 Years Prior to Study:**

none	33%
1-6	19%
7-12	12%
13-24	12%
> 24	24%

**\* Half had worked for  $\leq 6$  months 5 years before study entry**

# Prior Work History

(for those employed at any time during the 5 years prior to baseline)

## Number of Months Before Baseline that Most Recent Job Ended:

> 1-6 months	28%
> 7-24 months	25%
> 24 months	47%

\* Around half had not worked in 2 years prior to study entry

## Hourly Wage Earned at Most Recent Job before Baseline:

< \$1-4.00	17%
\$4.01-\$5.50	39%
\$5.51-\$7.00	17%
\$7.01+	27%

\* Most had held minimum wage jobs in the years prior to baseline

# **THE POSITIVE & NEGATIVE SYNDROME**

## **SCALE (PANSS)**

Adapted from: Kay, S.R., Fiszbein, A., & Ogler, L.A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, 13(2), 261-276.

### **Positive Scale:**

- P1 Delusions
- P2 Conceptual Disorganization
- P3 Hallucinatory Behaviors
- P4 Excitement
- P5 Grandiosity
- P6 Suspiciousness/Persecution
- P7 Hostility

### **Negative Scale:**

- N1 Blunted Affect
- N2 Emotional Withdrawal
- N3 Poor Rapport
- N4 Passive Apathetic/Social Withdrawal
- N5 Difficulty in Abstract Thinking
- N6 Lack of Spontaneity
- N7 Stereotyped Thinking

### **General Psychopathology Scale:**

- G1 Somatic Concerns
- G2 Anxiety
- G3 Guilt Feelings
- G4 Tension
- G5 Mannerisms & Posturing
- G6 Depression
- G7 Motor Retardation
- G8 Uncooperativeness
- G9 Unusual Thought Content
- G10 Disorientation
- G11 Poor Attention
- G12 Lack of Judgement & Insight
- G13 Disturbance of Volition
- G14 Poor Impulse Control
- G15 Preoccupation
- G16 Active Social Avoidance

**EIDP Key Findings:  
Achieving Employment  
Outcomes**

# **Economic Productivity of All EIDP Participants (E and C combined)**

**Over a 24-month period...**

- 2230 jobs were held by clients, an average of 2.2 jobs per worker**
- \$4.7 million was earned by clients, an average of \$5,786 per worker**
- 820,293 hours were worked by EIDP clients**

# **Features of All Jobs Held by All EIDP Participants**

- **Jobs paid an average of \$5.91 per hour**
- **86% of all jobs held were at minimum wage or above**
- **Client's jobs averaged 19.4 hours per week**
- **Only 17% of all jobs were full time (35+ hours per week); less than 1/3 of all FT jobs offered benefits**

# **Proportion of EIDP Participants Engaged in Any Paid Work**

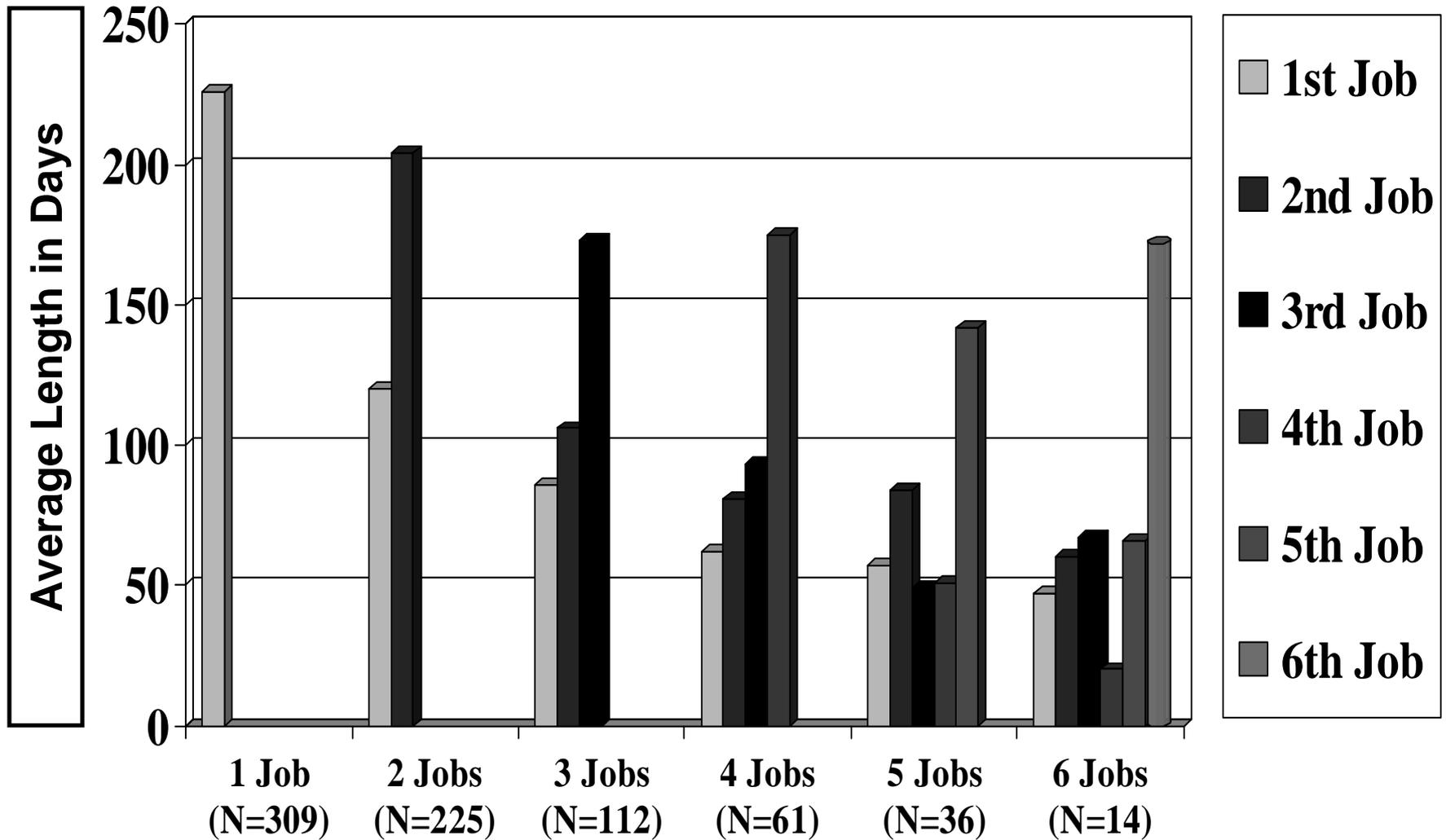
- 30% of those receiving services for 3 months
- 42% of those receiving services for 6 months
- 50% of those receiving services for 9 months
- 54% of those receiving services for 12 months
- 61% of those receiving services for 18 months
- 64% of those receiving services for 24 months

\* \* \*

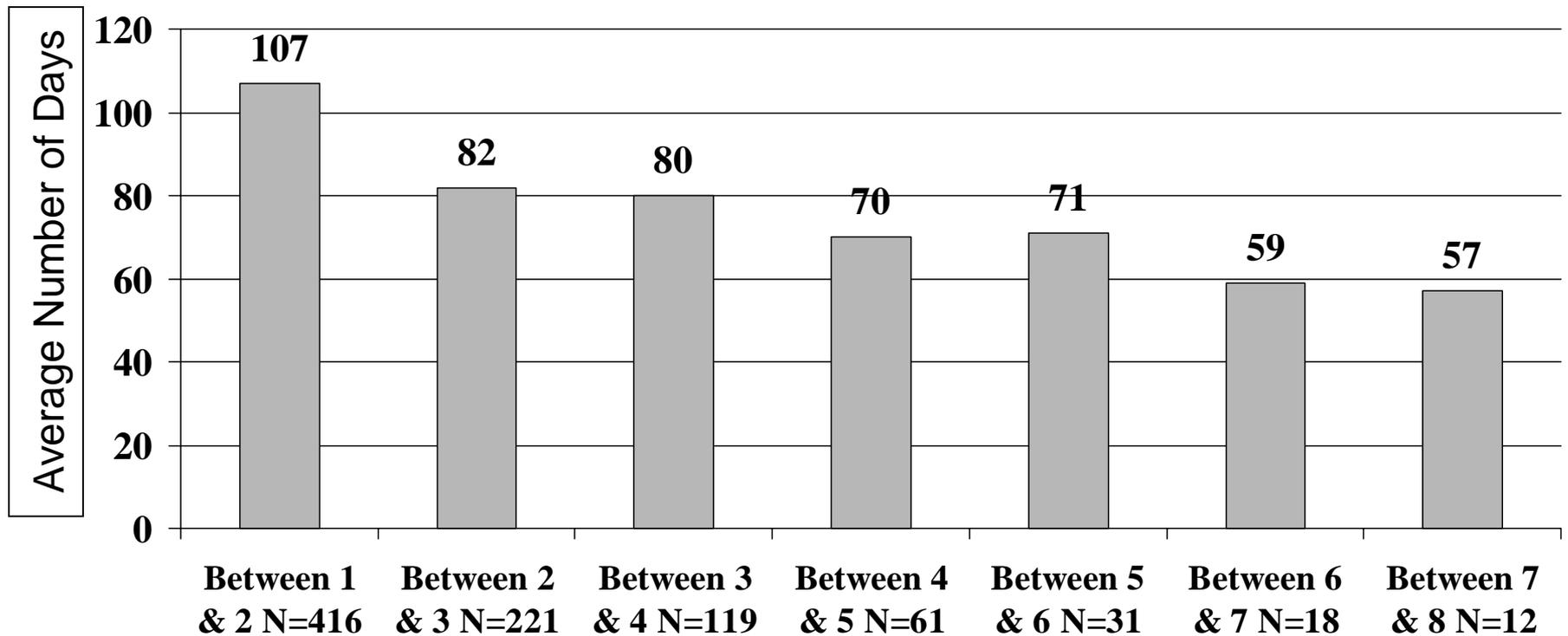
**The 1994/95 employment rate for persons with severe disabilities was 26%**

**Source: Survey of Income and Program Participation, US Bureau of the Census**

# Average Length of Jobs by Number Held



# Average Number of Days Between Jobs Among EIDP Participants with More than One Job



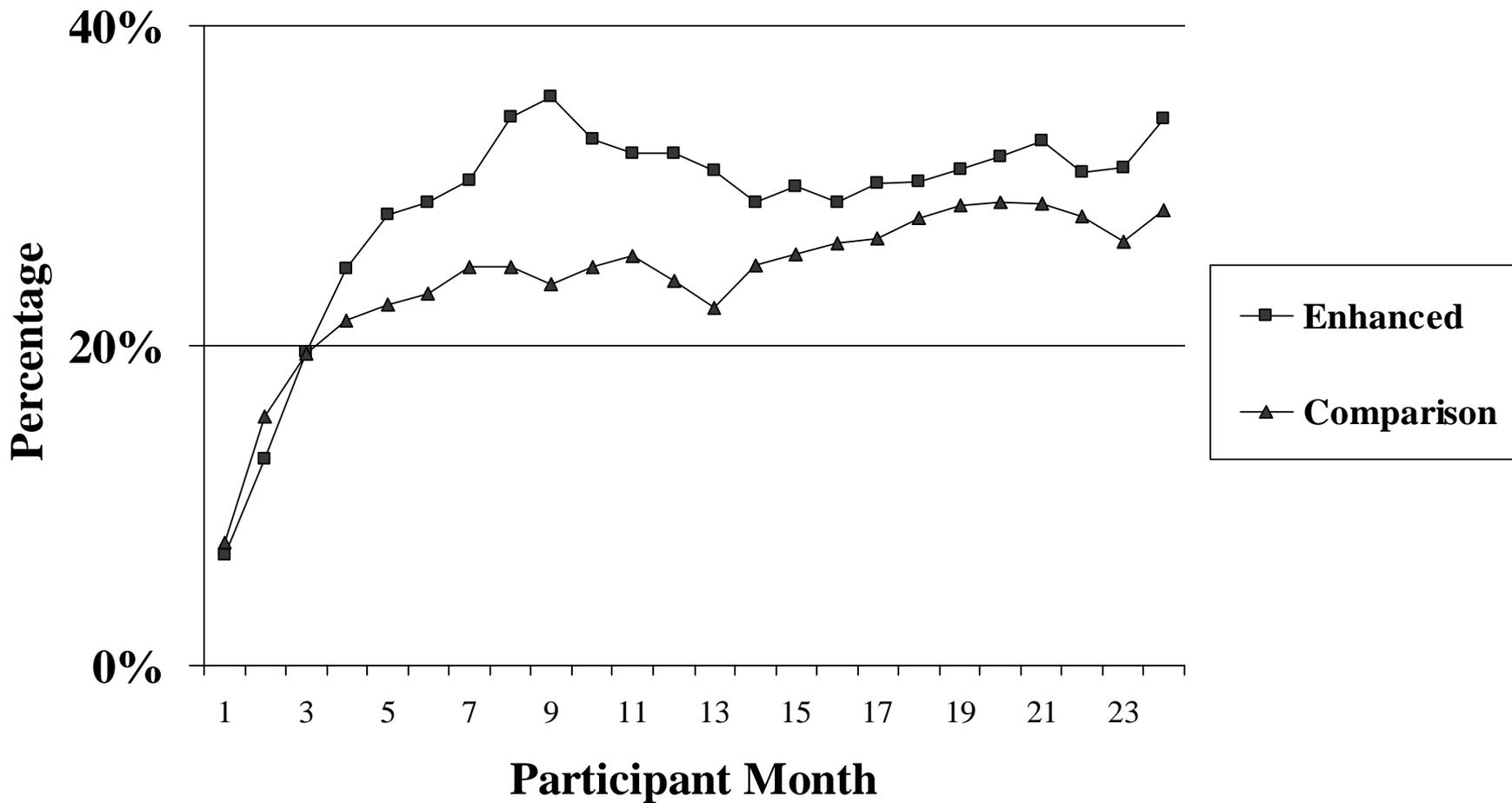
# **Outcomes Measured in the Enhanced vs. Comparison Group Analyses**

- **Competitive Employment\***
- **Work for 40+ hours per month**
- **Earnings**
- **Any Work for Pay**

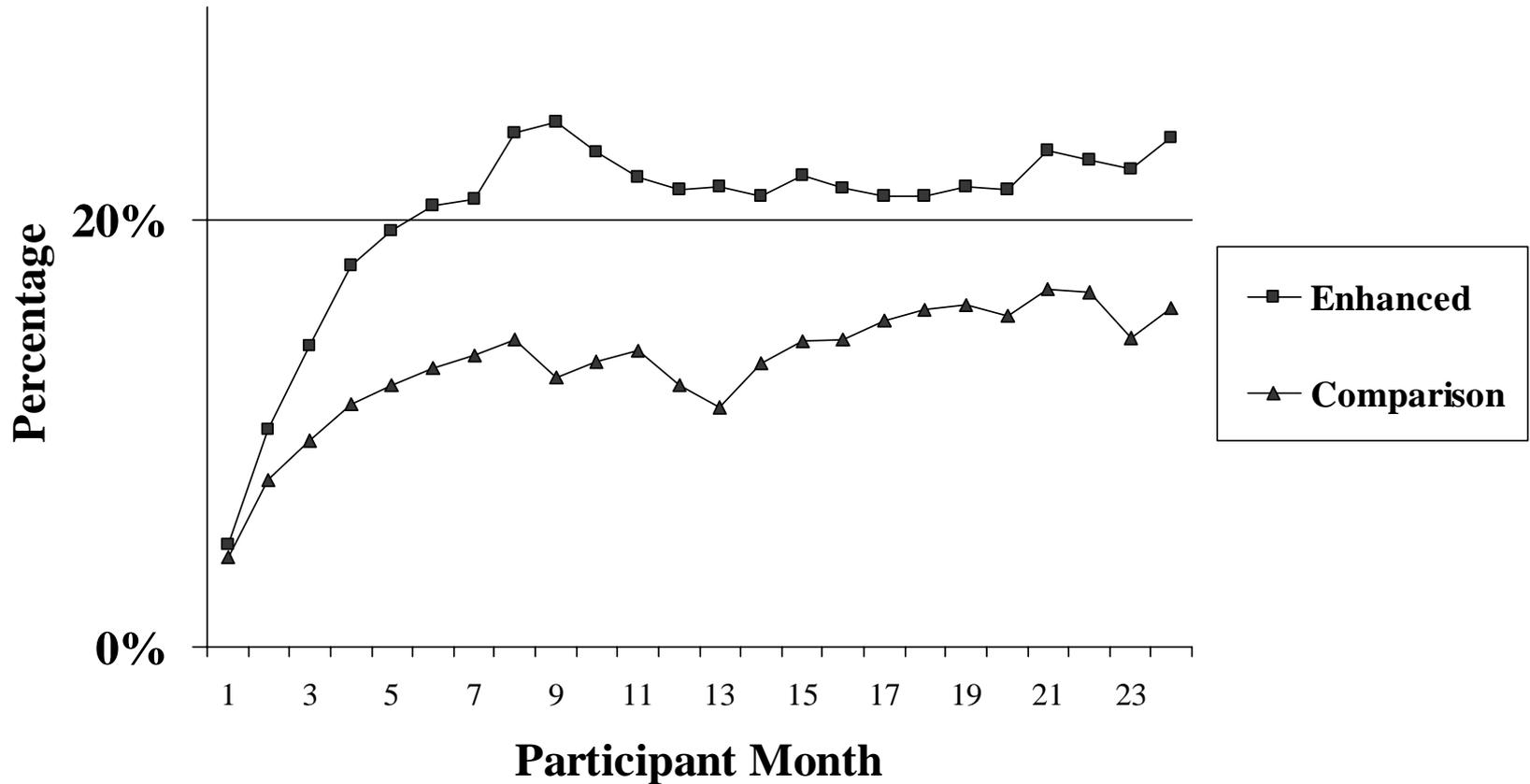
## **\*Competitive Employment:**

- **pays minimum wage or higher;**
- **located in mainstream, integrated settings;**
- **not set-aside for mental health consumers; *and***
- **job is consumer-owned.**

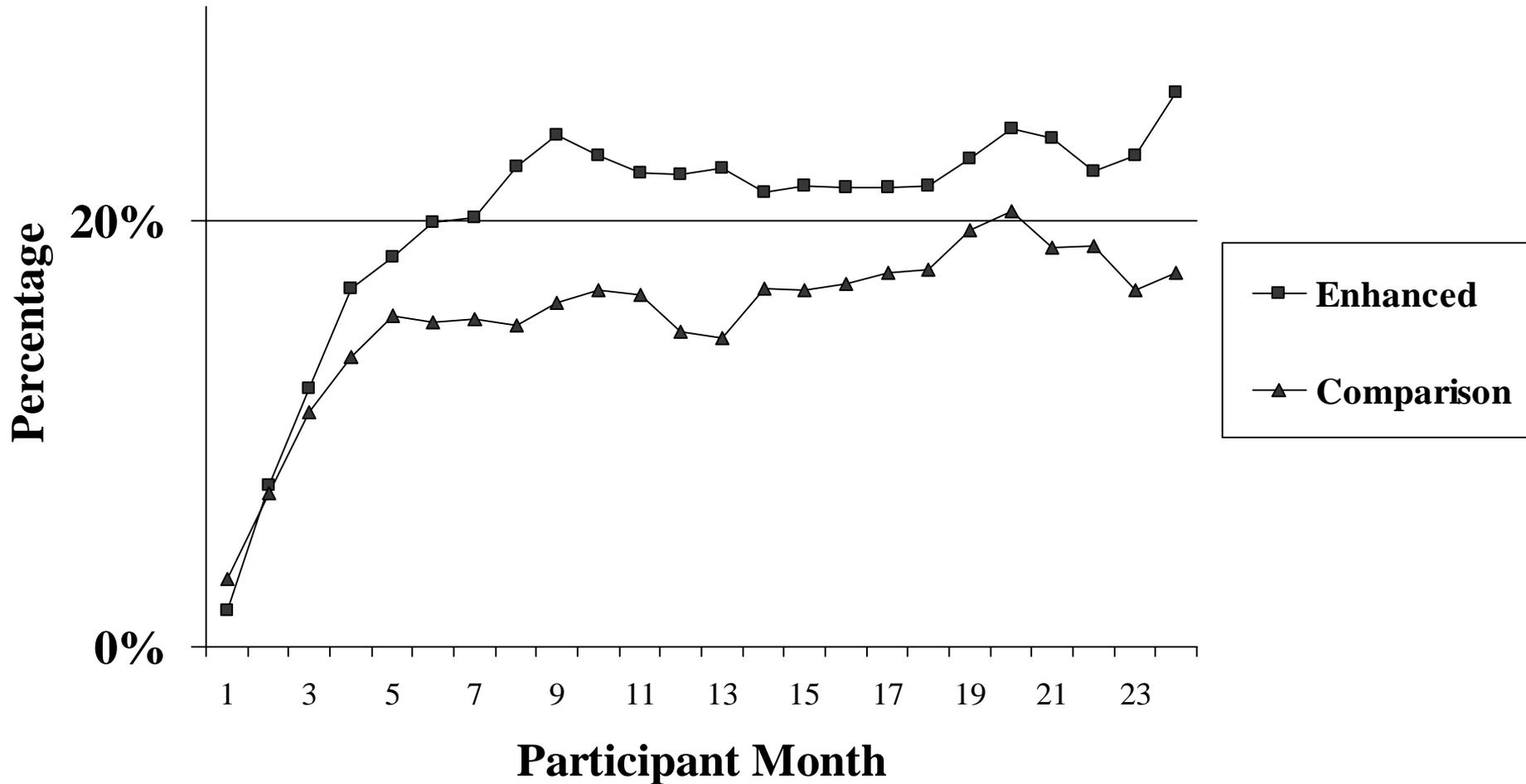
# Proportion Worked At All For Pay



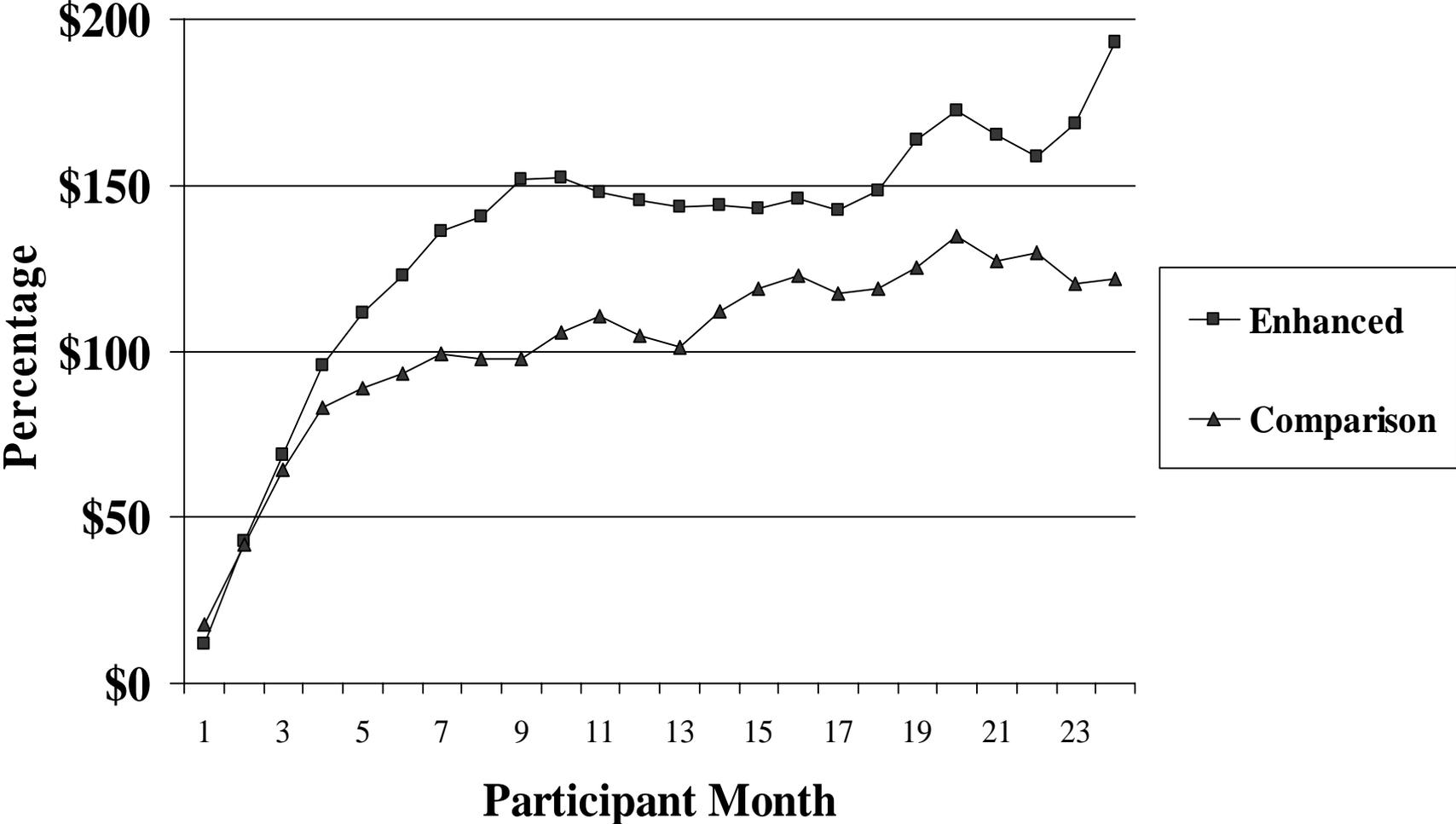
# Proportion Worked per Month in Competitive Employment (EIDP definition)



# Proportion Worked per 40 Hours+ Per Month



# Average Dollars Earned Per Month



# Statistical Analysis

Random-effects logistic regression modeling (MIXOR) was used to address the complex multi-site, multi-level EIDP data, handling issues such as:

- serial correlation (i.e., state dependency due to repeated measures of the same individual)
- individual heterogeneity (i.e., varying propensities toward the outcomes of interest)
- missing observations (i.e., assumption of ignorable nonresponse allowed retention of respondents with missing data at some time points, thus avoiding potential sample biases & including data from all available time points)
- use of time varying (symptoms) & fixed ( race) covariates (i.e., avoided over-estimating standard errors of time-varying covariates [type II error] & under-estimating those of time-fixed covariates [type I error])

# Participant Features Controlled For

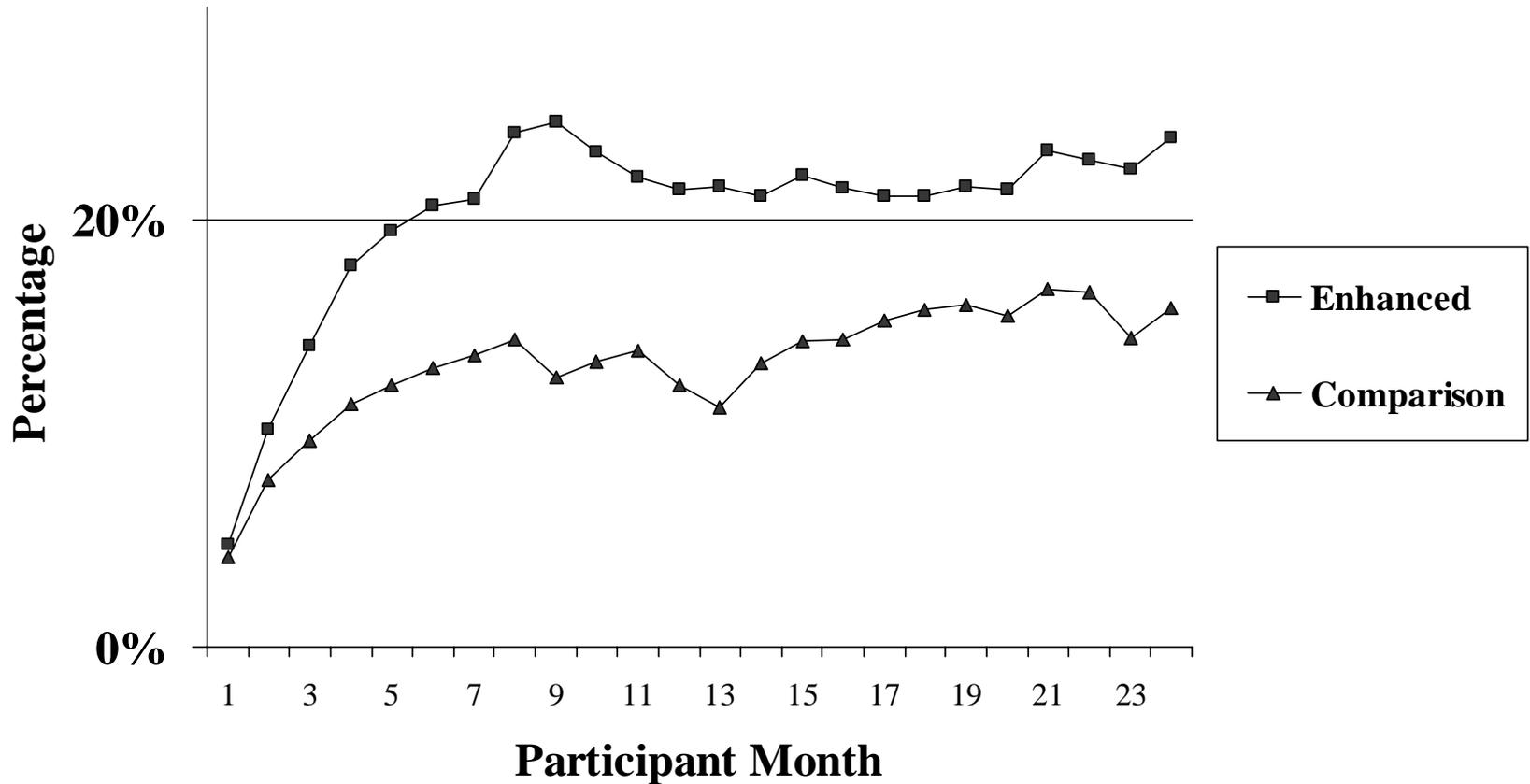
- **Gender**
- **Ethnicity**
- **Age**
- **Education**
- **Prior Work History**
- **Symptoms**
- **Functioning**
- **Marital Status**
- **Co-resident Children < 18 years old**
- **Diagnosis of Schizophrenia**
- **Co-occurring Health Problem or Disability**
- **Receiving Disability Income**

# **Findings: Effects of Study Condition**

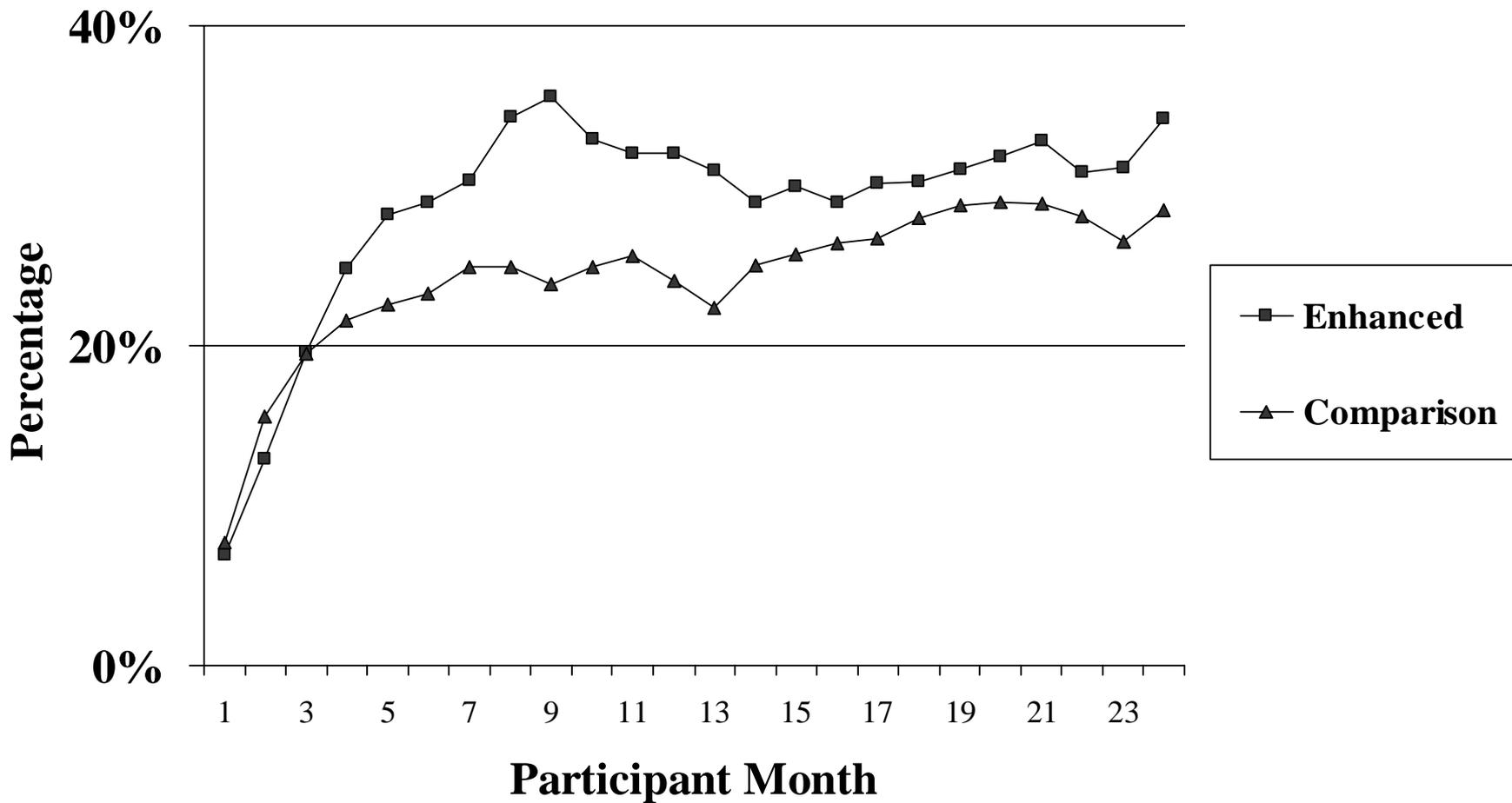
## **Controlling For Participant Characteristics...**

- in both the enhanced and comparison groups, people's employment *outcomes improved over time***
- those in the *enhanced groups had better outcomes* than those in the comparison groups**
- the advantage of the *enhanced group participants increased over time* relative to the comparison group**
- overall, even though people did better over time, most of the *improvement in outcomes occurred earlier* in the 24-month period, rather than later**

# Proportion Worked per Month in Competitive Employment (EIDP definition)



# Proportion Worked At All For Pay



# **Effects of Participant Characteristics**

- **After controlling for the effects of time and study condition, some participant characteristics still influenced employment outcomes. Most consistently, those with better outcomes were...**
  - **people with better work histories**
  - **people with fewer symptoms (positive or negative)**
  - **younger people**
  - **people with lower levels of functional impairment**
  - **people with no health problems or co-occurring disabilities**
  - **people not receiving disability income**
  - **people with diagnoses other than schizophrenia**
- **Even though participants with some characteristics did better than others, the enhanced models worked better...**

**REGARDLESS OF CONSUMERS' PERSONAL  
CHARACTERISTICS**

# Types of Services Measured in EIDP Study

## Vocational

Vocational Assessment/Evaluation  
Client Specific Job Development  
Collaboration with Employer  
Vocational Support Groups  
Collaboration with Family/Friends  
Vocational Treatment  
    Planning/Career Development  
Off-Site Skills Training/Education  
Off-Site Vocational Counseling  
On-Site Job Support  
Transportation

## Clinical

Case Management  
Family/Couples Counseling  
Emergency Services  
Evaluation/Diagnosis  
Individual Counseling  
Group Counseling  
Medication  
    Evaluation/Maintenance  
Partial Hospital Program

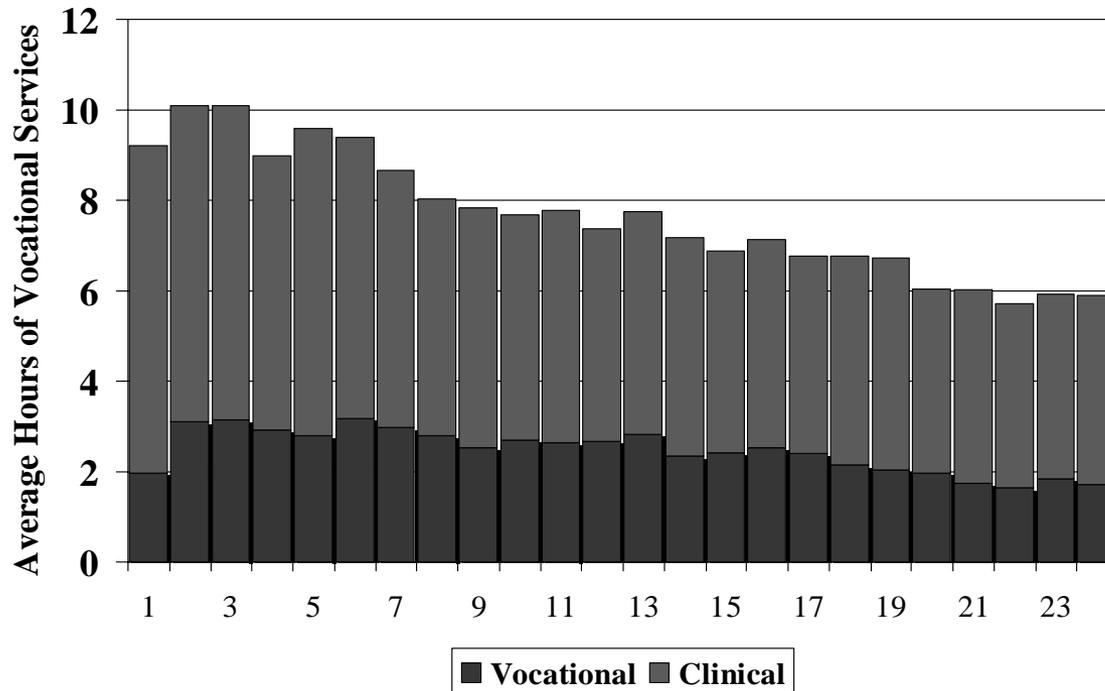
# **Effects of Program Components**

- **To our models, we added the total cumulative hours of vocational services received, and the total cumulative hours of clinical services received**
- **We controlled for the same participant characteristics**
- **We predicted the same four employment outcomes**

# **What We Found About Services...**

- **People received many more hours of clinical services than vocational services**

# Amount of Employment Services Received Over Time: Hours of Vocational vs. Clinical Services per Person by Month

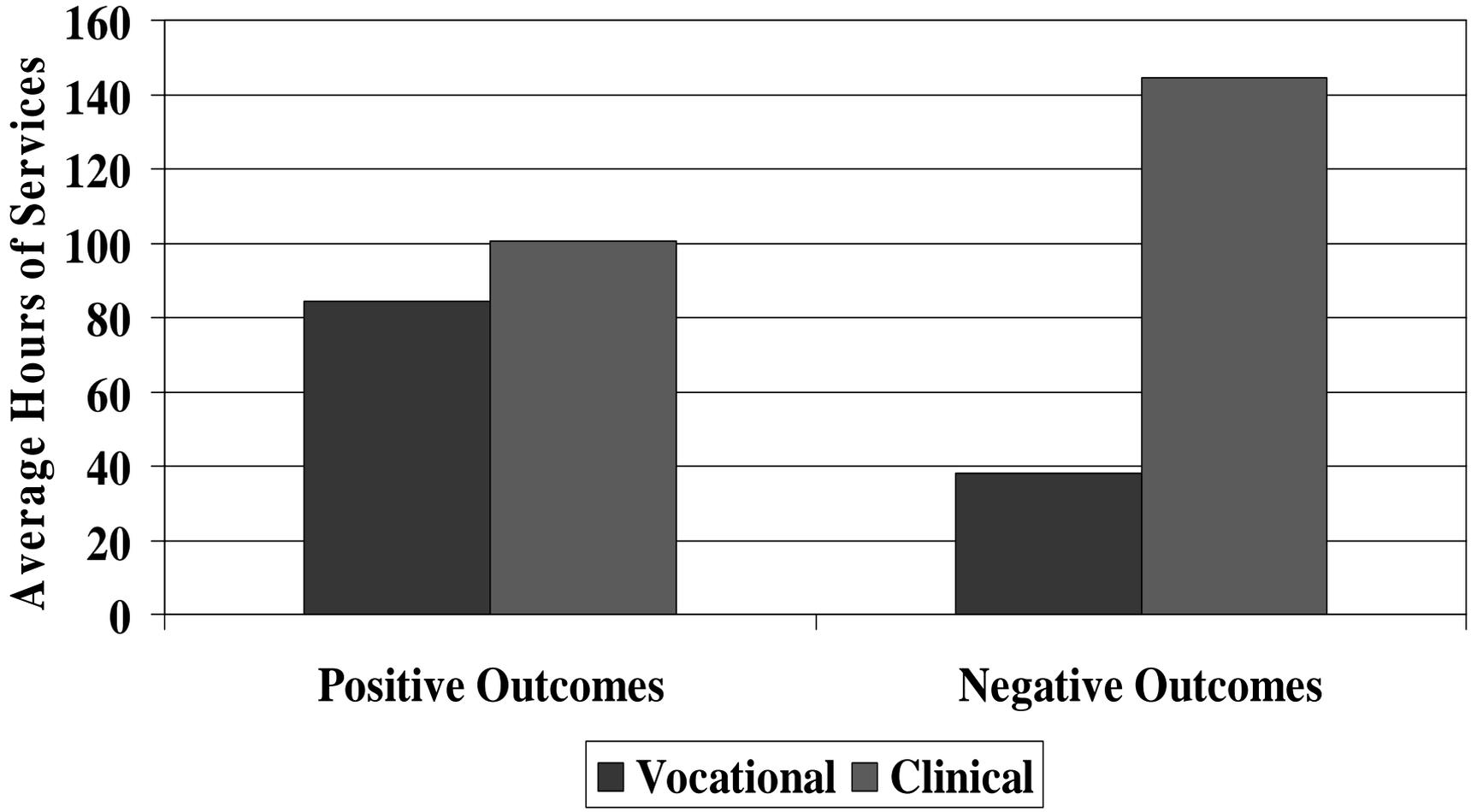


**Month of Program Participation**

# **What We Found About Services...**

- **People received many more hours of clinical services than vocational services**
- **Controlling for all other factors, those who received more total hours of vocational services had better employment outcomes**
- **Those who received more total hours of clinical services had poorer vocational outcomes**

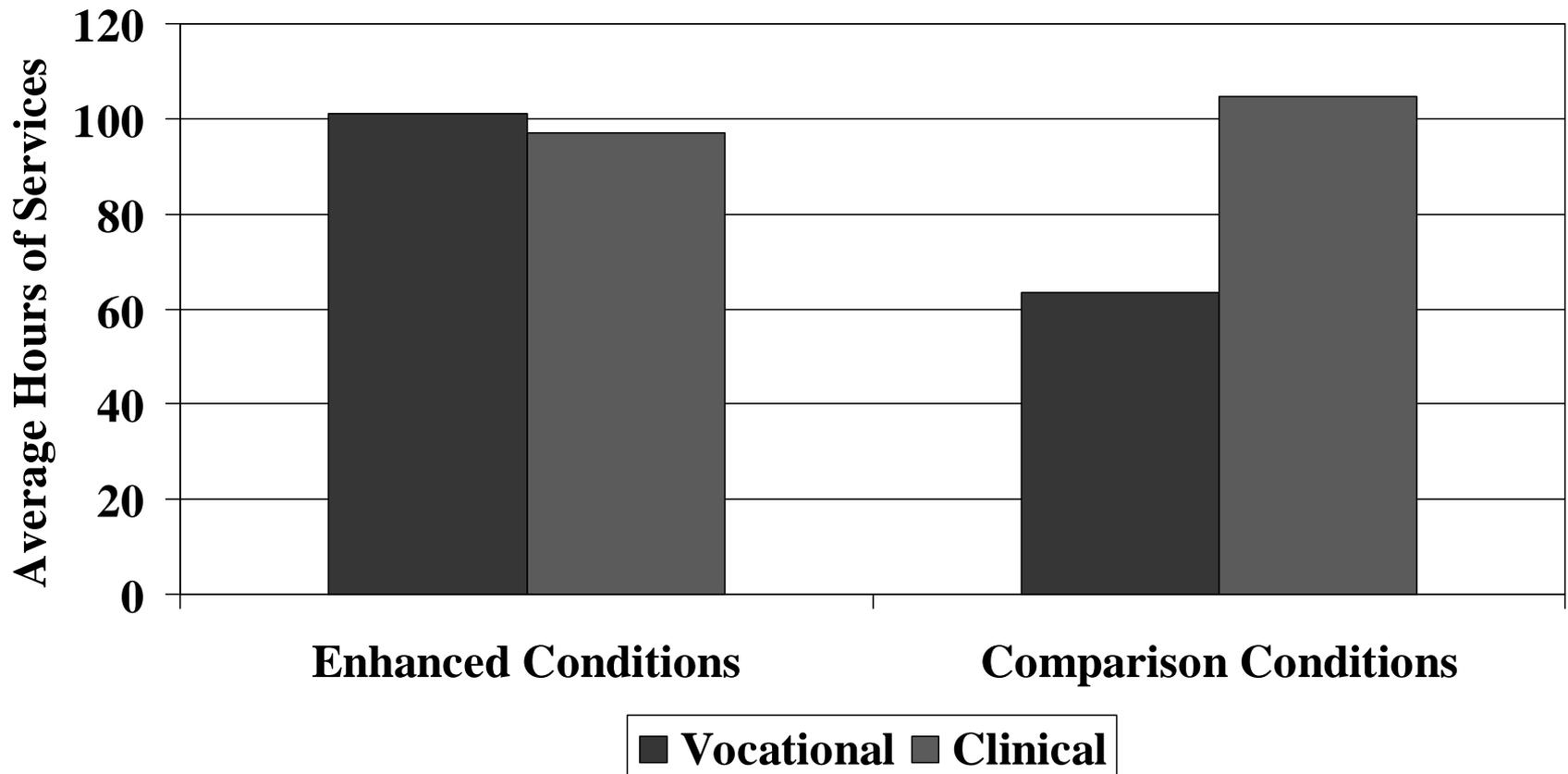
**Average # Hours per Client of Vocational & Clinical Services by Quality of Employment Outcome (Worked 40+ Hours/Month)**



# **What We Found About Services...**

- **We added an interaction term to our random regression models, to test whether there was an interaction between study condition and services received...**
  - **In the experimental condition, those who received MORE vocational and MORE clinical services had better outcomes than did participants in the comparison condition.**
  - **This may be because clinical and vocational services were well-integrated in the experimental condition programs, but not integrated in the control condition programs.**

# Average # Hours Per Client of Vocational & Clinical Services by Study Condition



# **What Do We Mean by Clinical & Vocational Services Integration?**

**Level of services integration was defined as “high” when vocational & mental health services were delivered...**

- ⊗ by the same agency**
- ⊗ at the same location**
- ⊗ using a single case record**
- ⊗ with regularly scheduled meetings of vocational & clinical providers (i.e., daily or no less than 3 times/week)**

# **Effects of Specific Program Components**

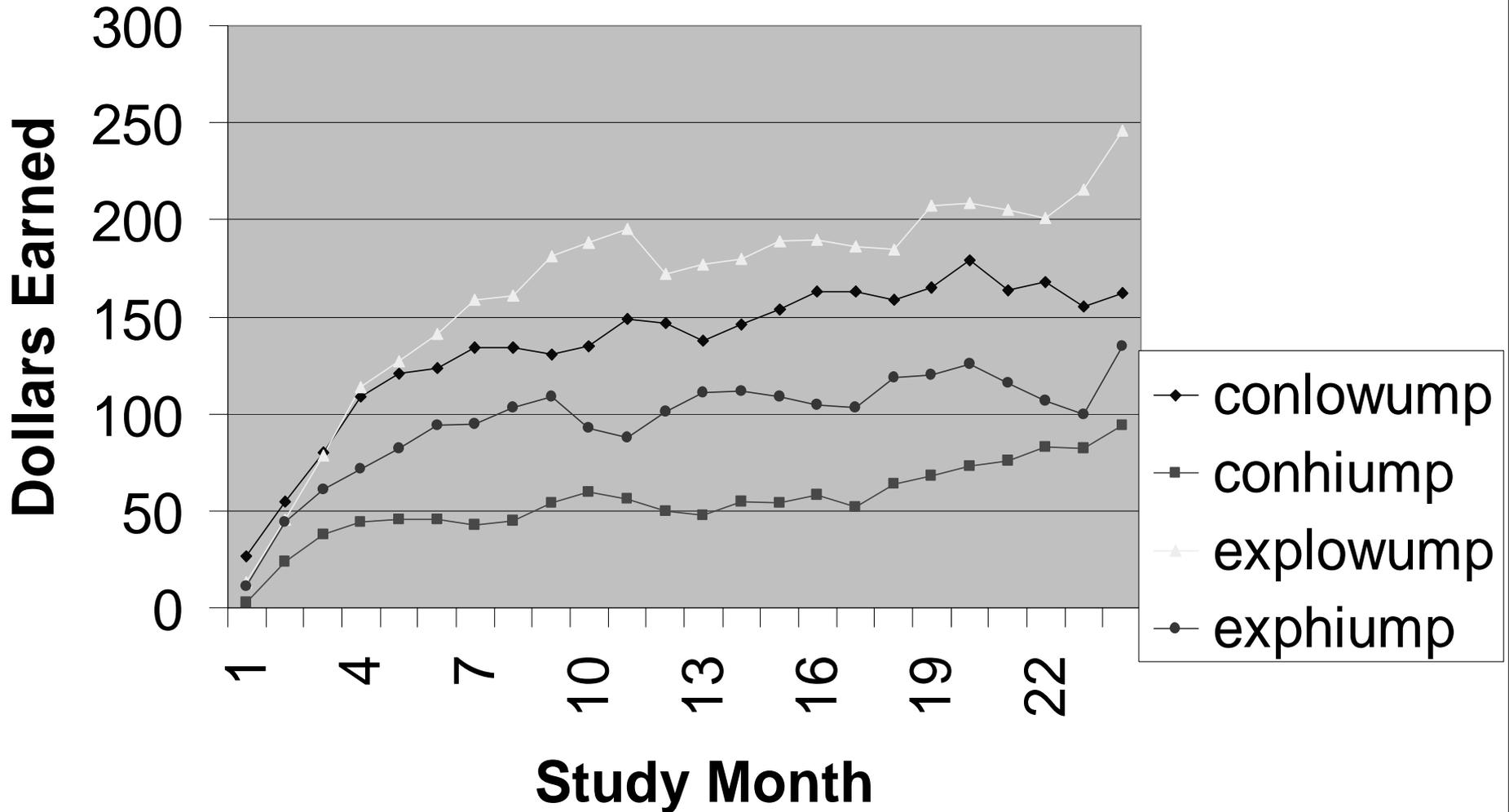
**The following types of services were associated with better outcomes...**

- **Vocational Services**
  - job development
  - on-site job support
  - collaboration with employers
  - vocational assessment
  - vocational treatment planning
  - vocational counseling
  - transportation
- **Clinical Services**
  - individual counseling
  - partial hospital programs (many of which were psychosocial rehabilitation programs)

# People with **Psychiatric** Disabilities are Subject to General Labor Market Trends

- In the EIDP, all four vocational outcomes were worse for those residing in counties with higher employment, regardless of:
  - Participants' study condition (E or C)
  - Participants' individual characteristics (demographics, clinical features, work experience, etc.)

# Average Earnings in EIDP Study



# Many People with Severe and Persistent Mental Disorders Live in Poverty

- Among those participating in the EIDP, almost three-quarters (73.9%) were at or below the poverty level, including those receiving disability income support...
  - % living in poverty on SSI 78%
  - % living in poverty on SSDI 59%
  - % living in poverty on SSI + SSDI 75%
  - % living in poverty on neither 87%

# Ratio of Income to Expenses by Employment Status in the EIDP Personal Economy Substudy\*\*

**Break-Even Point = 100%**  
**(Ratio of income to expenses)**

- Not Employed = 80% \*
- Employed = 120% \*
  
- Total Group = 113%

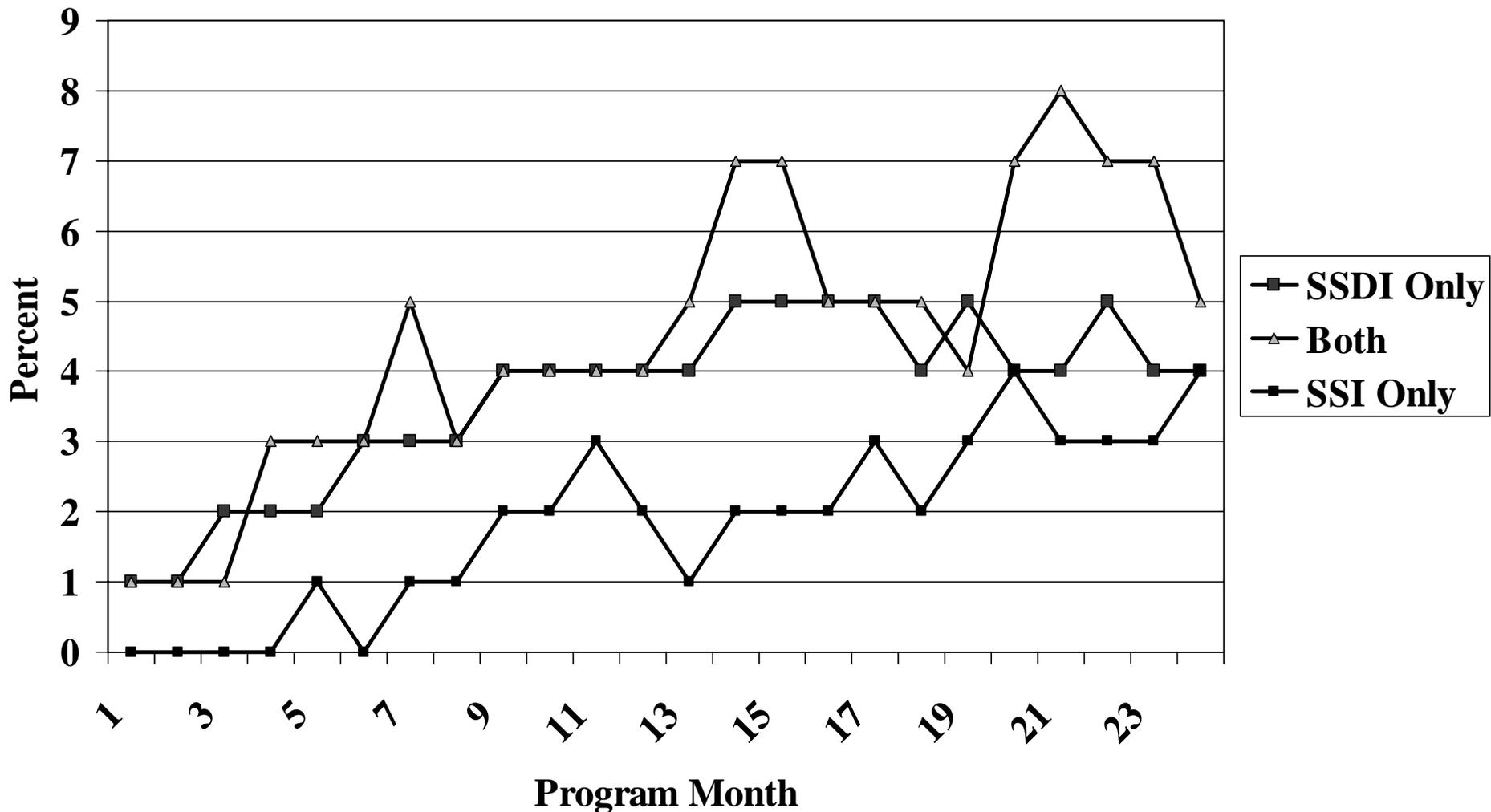
\* Mean ratio per group, Significant difference at  $p < .05$

\*\* Supplemental funding from the Social Security Administration

# VR Service Provider Incentives Tied to SGA (as in TWWIIA) will be Ineffective for Consumers

- Under current TWWIIA rules, providers using the milestone payment reimbursement option are paid when consumers' earnings reach SGA (\$800/month)
- Recent analyses of SIPP data indicate that there will be many “Tickets without takers...” (Salkever, 2003). Why?

# **% EIDP Experimental Condition Participants with Monthly Earnings at or above SGA by Disability Income Reciprocity Status**



# What Have We Learned?

- The more vocational services people receive, the better their employment outcomes.
- Over time, more people worked, their jobs lasted longer and longer, and the time between jobs grew shorter and shorter.
- Consumers demonstrated a substantial productivity potential, earning millions of dollars and working hundreds of thousands of hours.

# Additional Lessons Learned

- People who receive a relatively balanced amount of well-integrated and coordinated vocational and clinical services have much better employment outcomes than those who receive non-integrated services.
- People's employment success increases over time, making it important that programs be prepared to offer ongoing support and services that build on career achievements.
- Integrated employment services result in positive employment outcomes regardless of consumers' personal characteristics, health problems, diagnoses, symptom levels, work histories, and functioning levels.

# What Do People Need?

- People need to receive more vocational services to complement the levels of clinical services received.
- Some people may need extra assistance or tailoring of programs to meet special needs (e.g., help with medical problems, support for dealing with troublesome symptoms, extra training for work inexperienced ppl, benefits counseling for SSI/SSDI recipients).
- Jobs need to be better paying, of higher quality and of higher expertise to move consumers out of the level of the working poor, and to make mental health consumers attractive to VR providers given current payment incentives.

# **Learn more about the EIDP by visiting its website...**

**[www.psych.uic.edu/eidp/](http://www.psych.uic.edu/eidp/)**

- **full descriptions of study conditions including research & provider contact information**
- **downloadable protocols & documentation**
- **latest study findings & publications**
- **downloadable presentations re: the study**
- **links to relevant sites**