

# A longitudinal exploration of school, training, and work among young adults with serious mental health conditions

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# Acknowledgements

The Learning & Working Center at Transitions to Adulthood Center for Research is a national effort that aims to improve the supports for youth and young adults, ages 14-30, with serious mental health conditions to successfully complete their schooling and training and move into rewarding work lives. We are located at the University of Massachusetts Medical School, Worcester, MA, Department of Psychiatry, Implementation Science and Practice Advances Research Center.

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# Introduction

# Background

- Youth and young adults (Y&YAs) with serious mental health conditions (SMHC) have poorer educational attainment and employment rates than their peers with no disabilities or other disabilities
- Little is known about correlates of successful education and employment outcomes Y&YA with SMHC
- Social Cognitive Career Theory (Lent RW, Brown SD, Hackett G., 1994) suggests the influence of malleable psychosocial factors (e.g., self-efficacy) but these have yet to be empirically observed or tested with this population
- More research is needed to inform the design and delivery of employment and education services that could benefit this population

# Research Objectives

Motivated by previous qualitative research, this study seeks to:

1. Describe the longitudinal patterns of school, training, and work activities of Y&YA with SMHC
2. Assess whether and how various social and psychosocial factors influence or are influenced by school, training, or work, or other demographic factors

# Study Design & Methods

# Recruitment

- Enrollment period: December 2017 - January 2019
- Longitudinal quantitative survey via REDCap
- Eligibility Criteria
  - 16-25 years old
  - Diagnosed with at least one mental health condition
  - Currently working and/or in school, or actively seeking to do so
  - Experienced functional impairment or interruption to daily activities, or has been identified as having a disability
- National recruitment utilizing social media and broader list-servs
- Young adults with lived experience advised on the design of the study, led consent and data collection efforts, and participated in analyses of data

# Data Collection

Study Timeline (over 20 months)																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Baseline	x																				
Check-in 1			x																		
Follow-Up 1					x																
Check-in 2							x														
Follow-Up 2									x												
Check-in 3											x										
Follow-Up 3													x								
Check-in 4															x						
Follow-Up 4																	x				
Check-in 5																			x		
Follow-Up 5																					x

Surveys every 4 months, with text/phone/email check-ins in-between



# Web survey (x4)

- Basic demographics
- Psychological distress
- Functioning
- Major life events
- Social support
- Self-stigma Activities and events related to school, work, and training (e.g., getting fired, quitting)
- Measures related to our theoretical model, including vocational outcome expectations and self-efficacy as they relate to school, work, and training


**References:** Boyd, Otilingam, & DeForge, (2014); Lent, Brown, & Gore (1997); Sarason et al. (1987); Sunderland, Mahoney, & Andrews (2012); Thoresen et al. (2010); Waghorn, Chant, & King (2007)

# Data Collection Prior to 1/15/2020




**Baseline**

- Completed-179




**Follow up 2**

- Completed-161
- Retention 91.5%



**Follow up 1**

- Completed-169
- Retention 95.5%



**Follow up 3**

- Complete 158
- Retention 89.3%

# Data analysis strategies

- Cleaning of longitudinal data
- Comparison of individuals with no missing timepoints to those without (no differences!)
- Quantification of work, school, and training activities at each timepoint
- Assess if/how scores on psychosocial covariates change over time (they do!)
- Generalized linear mixed models (GLMM) were then used to evaluate covariation between identity codes (i.e., work, school, and training identity over time), psychosocial covariates theoretically hypothesized to influence or be influenced by work, school, training identities, and other hypothesized covariates (e.g., demographics, life events, diagnosis)

# Description of the sample (n=179)

# Age, gender, and race/ethnicity

Age	N (%)
16 & 17 yrs old	14 (9%)
18 & 19 yrs old	34 (23)
20 & 21 yrs old	36 (24)
22 & 23 yrs old	34 (23)
24 & 25 yrs old	30 (20)

Average age = 20.9 (sd = 2.5) years

Race/Ethnicity	N (%)
White, non-Hispanic	118 (65.9)
Black, non-Hispanic	11 (6.1)
Hispanic including Hispanic/Black and Hispanic/White	26 (14.5)
Asian	11 (6.1)
Other	13 (7.3)

Gender	N (%)
'always' Female	106 (38%)
'always' Male	29 (10)
'always' Transgender	2 (0.7)
Does not identify as male, female or transgender at all timepoints*	1 (0.4)
Multiple gender identities over time	140 (50)

*\*i.e., gender fluid, genderqueer, non-binary, gender non-conforming*

# Mental health and socioeconomic status

Diagnoses	N (%)
Anxiety Disorder	129 (87%)
Major Depression	104 (70)
PTSD	39 (26)
Eating Disorder	25 (17)
Bipolar Disorder	19 (13)
Borderline Personality Disorder	9 (6)
Schizophrenia or Schizoaffective Disorder	7 (5)

Income (n=100)	N (%)
<\$10K	58 (58%)
between \$10K-20K	22 (22)
Greater than \$20K	20 (20)

Highest education at baseline	
Still in high school	19 (11.6)
HS diploma or GED	30 (18.3)
Some college	66 (40.2)
Associates	13 (7.9)
Bachelors	31 (18.9)
Masters	5 (3)

- 60% reported at least one parent with a college education
- 12% reported receiving supplemental income or other financial benefits

# Major Life events experienced at any point during the study

- 21% report a family member or close friend having died
- 15% report a significant change in relationship status
- 13% report hospitalization for mental illness
- 11% report experiencing a major illness or injury
- 10% report unstable housing (e.g., homelessness, couch-surfing)
- 6% report using substances such as alcohol to the point of interference with daily life activities
- 1% report spending time in jail

# Covariates explored for inclusion in mixed models

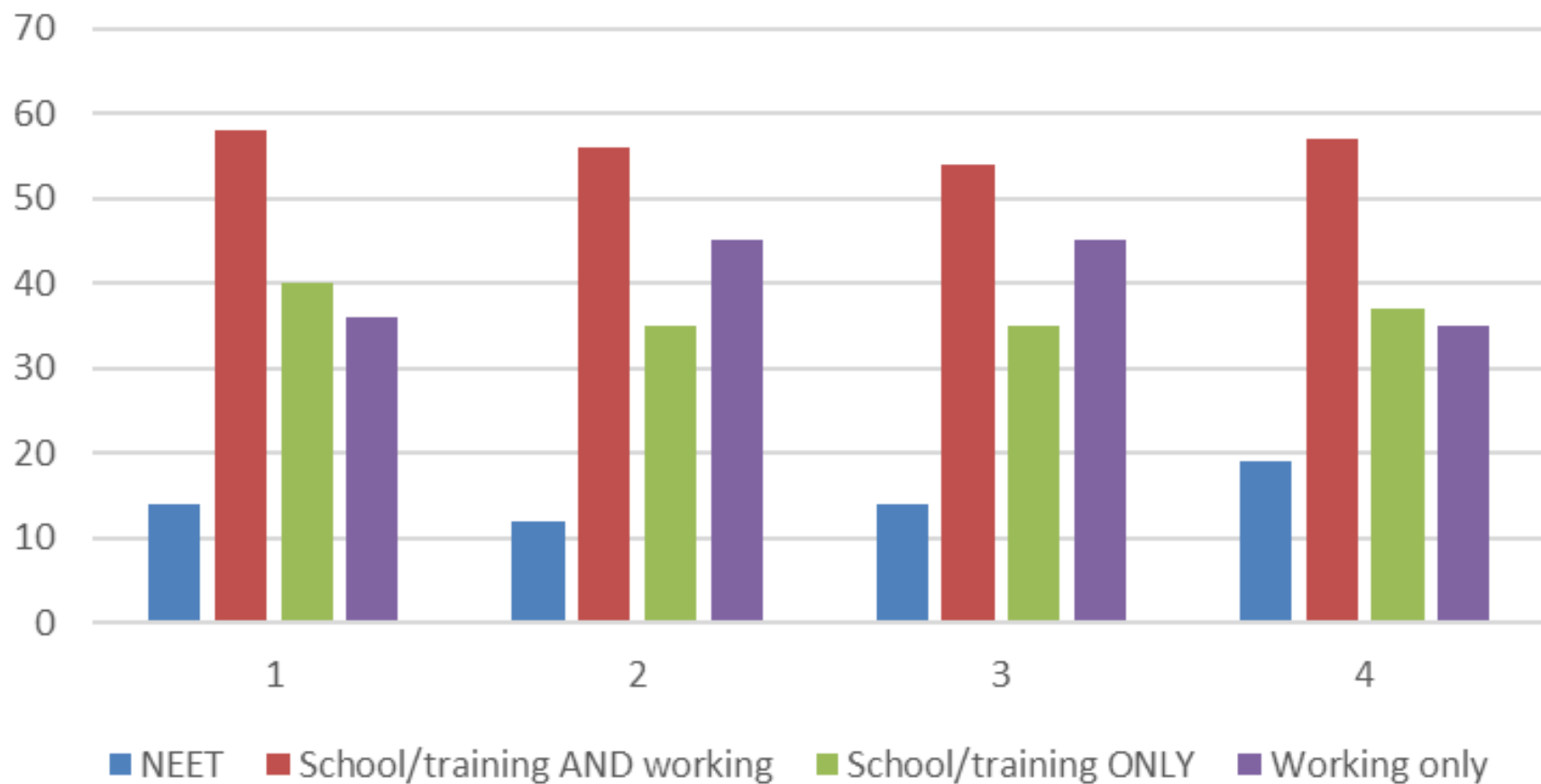
- Gender, age, race, parental education
- Ever (i.e., over the course of the study):
  - Quit a job
  - Fired or laid off from a job
  - Quit a class in school
  - Failed a class in school
  - Spent time in jail
  - Had a major illness or injury
  - Went to the ER or hospitalized for mental health problem
  - Had a family member experience a change in health
  - Had a close family member or friend die
  - Had a change in relationship status
  - Not had a place to call home
- Diagnosed with
  - Depression
  - Anxiety
  - PTSD
  - Bipolar
  - Schizophrenia
  - Eating Disorder
  - Borderline Personality Disorder



# How do School, Training, and Work activities change over time?

**School,  
training or  
work activity  
at each time  
point**

School/Training Status - Cross-sectional



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# Quantifying diverse and changing pathways

- At each timepoint, participants were coded and categorized as fitting one of the following “identities” related to their school, work and training activities:
  - Student: Little-to-no work
  - Worker: Little-to-no school
  - 50/50 School/Work mix
  - Struggling to engage/NEET (Not engaged in employment, education, or training)
- Activity was then summarized over data points to describe their longitudinal school/work identity, i.e., their primary role/activity.
  - Coded based on activity code at 3 out of 4 timepoints
  - PI and Research Coordinator investigated 50/50 combinations and coded by hand when needed

# Resulting new variable quantifying longitudinal primary identity

Work/School Identity Over Time	N (%)
Student with little to no work	44 (29)
Worker with little to no school	43 (28)
50/50 school/work mix	38 (25)
NEET - struggling to engage	28 (18%)

26 participants were removed from activity analyses

# **An exploration of if and how various social and psychosocial factors influence or are influenced by school, training, or work, or other demographic factors**

# **PSYCHOLOGICAL DISTRESS**

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# Psychological Distress (Kessler K10)

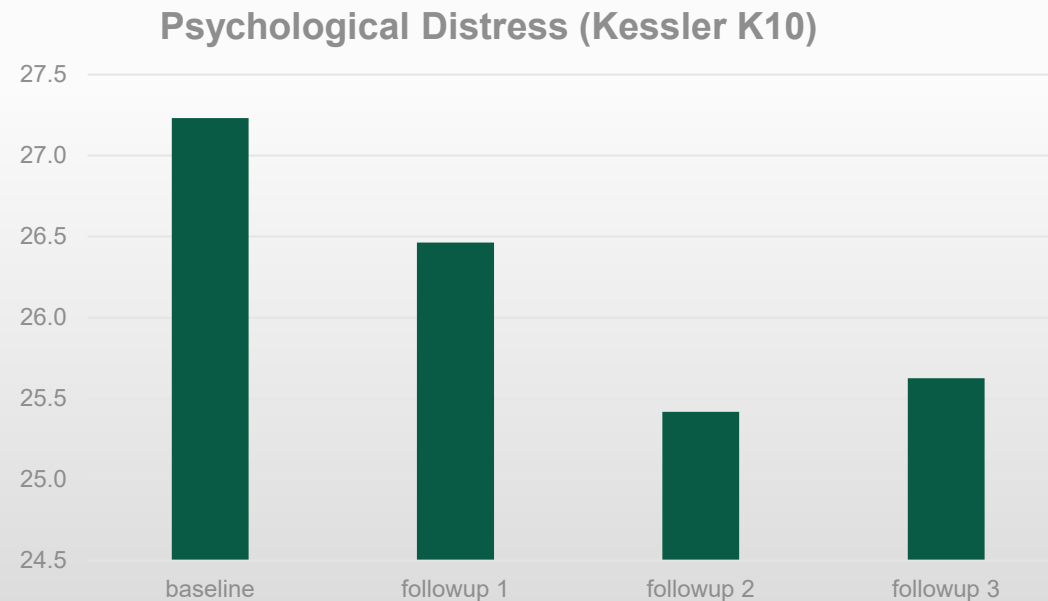
Example items:

During the last 30 days, about how often did you feel:

- tired out for no good reason?
- restless or fidgety?
- so nervous that nothing could calm you down?

None of the time / A little of the time / Some of the time / Most of the time / All of the time

Higher  
scores =  
MORE  
distress



Kessler.,et al, 2002.

# Multivariate modeling: Psychological Distress

- Pairwise contrasts, after adjusting for significant covariates, do not indicate any significant differences in psychological distress scores by school/work identity.
- There are statistically significant differences (at the  $p < .05$  level) in psychological distress scores by some covariates. Those who had no place to call home, were hospitalized for mental illness, or had failed a class at some point during the study had higher psychological distress scores.





**FUNCTIONING**

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# Functional Assessment Short Test (FAST)

Measures concepts such as:

- Autonomy: e.g., taking responsibility for the household, living on their own, shopping
- Occupational Functioning: e.g., holding down a paid job or going to school regularly
- Cognitive Functioning: e.g., ability to make mental calculations, focus on a book, learn new information

4-point scale, global

score = sum

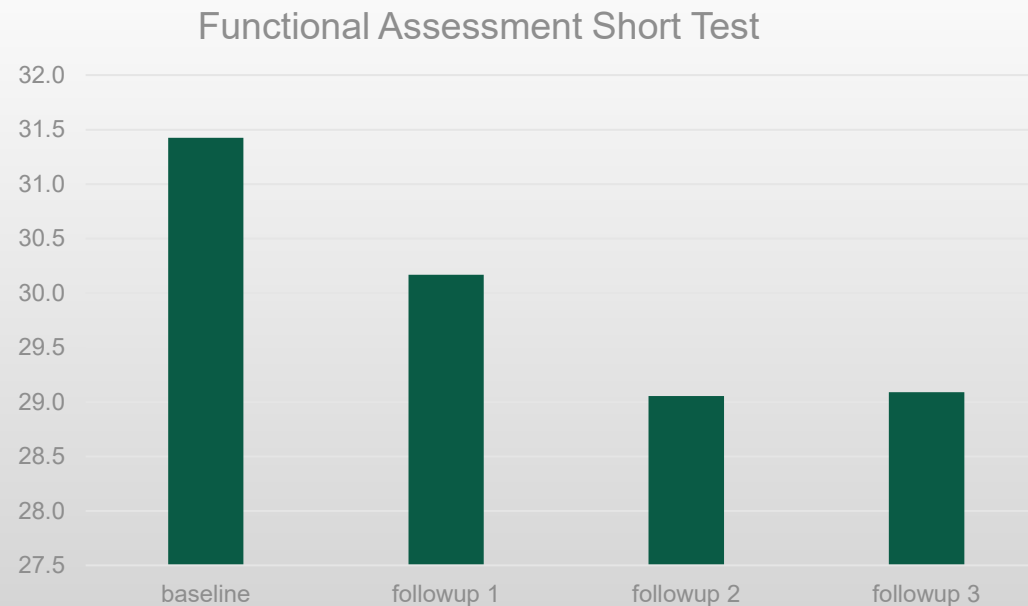
*(0) = no difficulty, (1) = mild*

*difficulty, (2) = moderate*

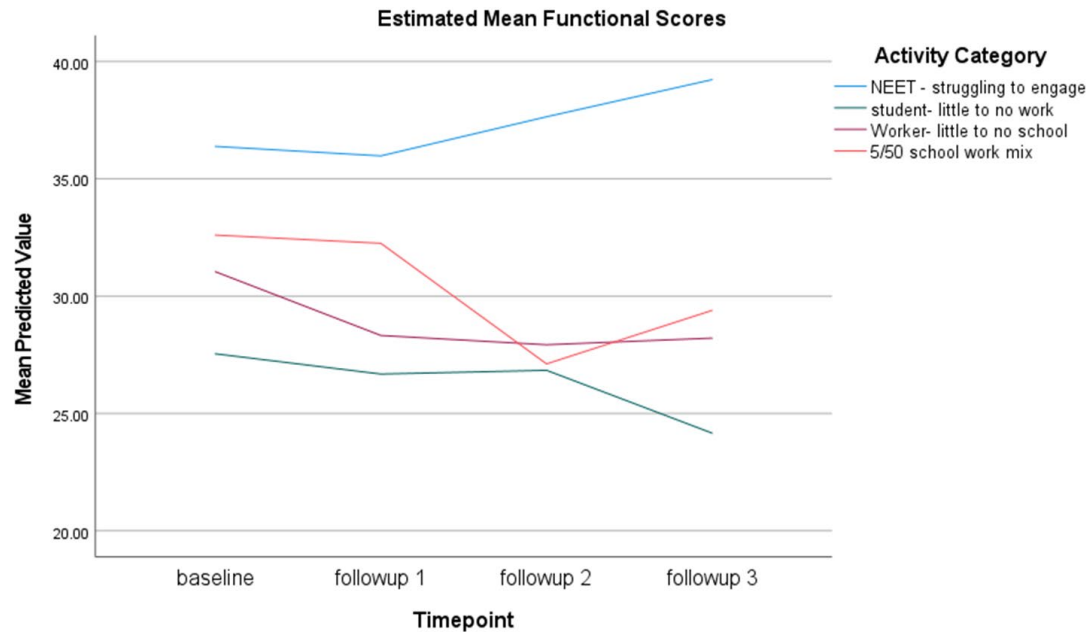
*difficulty, (3) = severe*

*difficulty*

**Higher scores = WORSE functioning**



# Multivariate modeling: Functioning



*Pairwise contrasts, after adjusting for significant covariates, indicate significant differences in functional scores between NEET and all activity groups and between student-little to no work and 50/50 school-work mix.*

*There are some statistically significant differences (at the  $.<.05$  level) in functioning scores by some covariates. Those who had a bipolar diagnosis, were hospitalized for mental illness, or had failed a class at some point during the study had worse functioning scores.*



# **SELF-STIGMA**

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# Self Stigma Scale

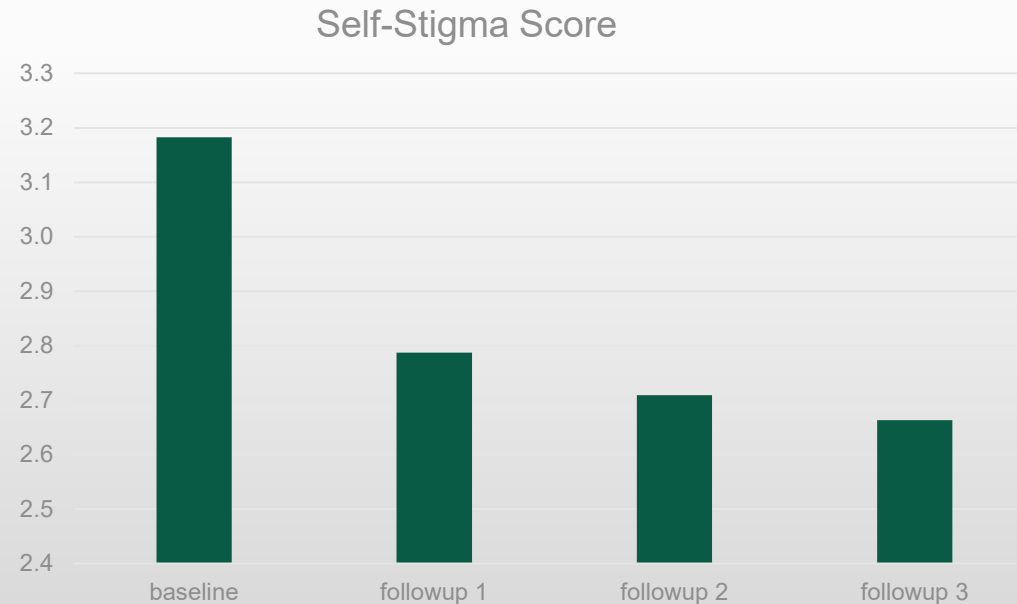
Example Questions: How often do you feel:

- Alienated from other people because of your mental health condition(s)?
- Sadness because you have a mental health condition(s)?
- Disappointment because of your mental health condition(s)?

Never / Almost Never / Sometimes / Fairly Often / Very Often

Global score = average

Higher scores = more self-stigma



# Multivariate modeling: Self-stigma

- Pairwise contrasts, after adjusting for significant covariates, do not indicate any significant differences in self-stigma scores by activity group.
- There are statistically significant differences (at the  $p < .05$  level) in self-stigma scores by some covariates. Those who had no place to call home, were hospitalized for mental illness, or had failed a class at some point during the study had higher levels of self-stigma.



# **VOCATIONAL OUTCOME EXPECTATIONS**

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# Vocational Outcome Expectations

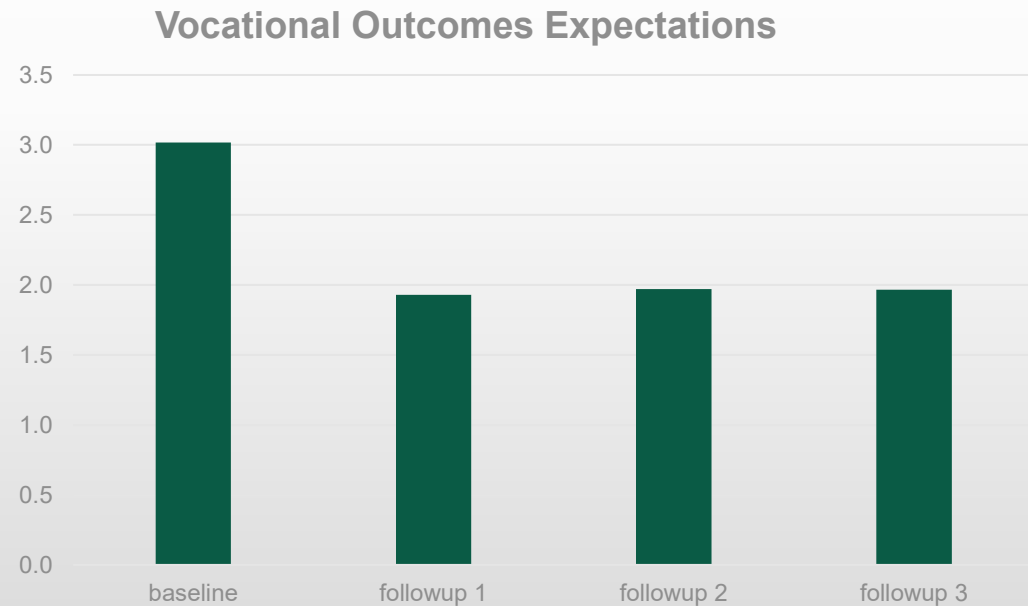
Rate your agreement:

- My career planning will lead to a satisfying career for me
- The future looks bright for me
- I have control over my career decisions

Strongly disagree / disagree / agree / strongly agree

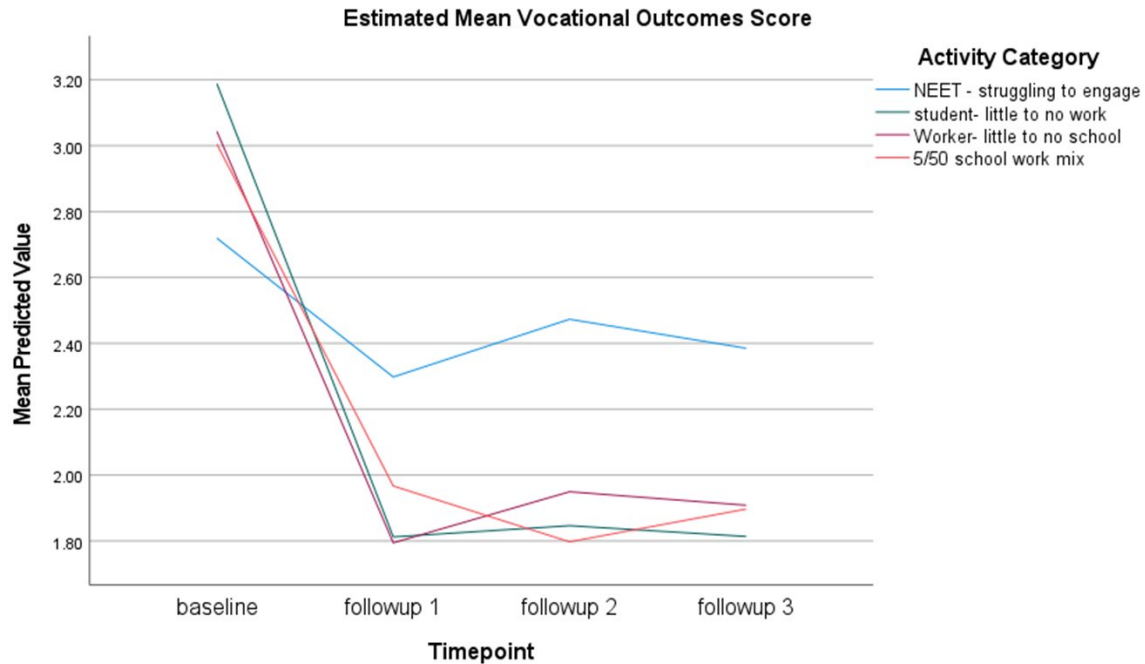
Global score = average

Higher scores = more positive outcome expectations.





## Multivariate modeling: Vocational Outcome Expectations



*Pairwise contrasts indicate significant differences between NEET and all other activity groups.*

*The only statistically significant differences (at the  $p < .05$  level) in vocational outcome scores are by timepoint and by the interaction between timepoint and activity category.*



# **WORK SELF-EFFICACY**

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# Work related self-efficacy

Self-confidence ratings of 19 work-related activities, e.g.:

- Find new ways to manage the added stress of working
- Check instructions with the supervisor
- Work accurately and efficiently

Higher scores = more self-efficacy



# Multivariate modeling: Work self-efficacy

- Pairwise contrasts do not indicate significant differences between activity groups.
- There are statistically significant differences (at the  $p < .05$  level) in work self-efficacy by age and among those with a schizophrenia diagnosis.



# **ACADEMIC SELF EFFICACY**

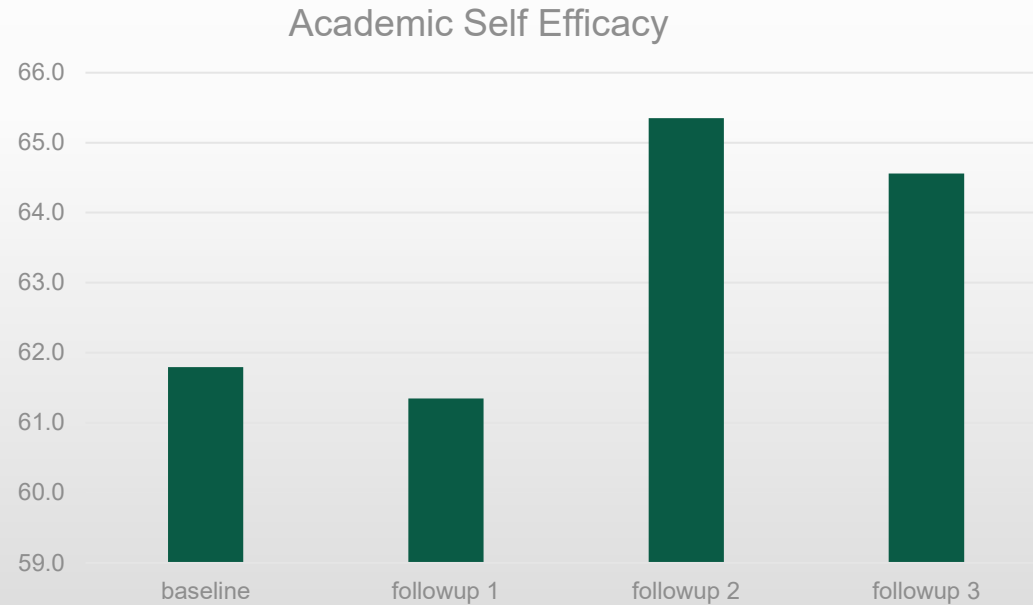
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# Academic Self Efficacy

Self-confidence ratings on items related academic activities, e.g.:

- Plan your schoolwork
- Finish homework assignments by deadline

Higher scores = more self-efficacy



# Multivariate modeling: Academic self-efficacy

- Pairwise contrasts do not indicate significant differences between activity groups.
- There are statistically significant differences (at the  $p < .05$  level) in academic self-efficacy by some covariates. Those who had no place to call home and those who failed a class at some point during the study had lower levels of academic self-efficacy.



# Conclusions



# Limitations

- Some of the measures are not culturally relevant or well-validated with young adults
- Repeated measures design introduces unintended bias or reference points in responses
- There are no existing norms for quantifying and comparing longitudinal patterns of school, training, and work
- Relatively small sample size for more sophisticated trajectory analyses
- Lots of ways to look at the data

# Implications

- Young adult's school, training, and work activities are frequently fluctuating and non-linear – need to better quantify.
- Psychosocial covariates hypothesized to influence or be influenced by school, training, or work experiences do change over time.
- Young adults with certain experiences and/or from certain backgrounds may be disadvantaged in regards to school, training, and work experiences and associated psychosocial correlates, including those who:
  - Are NEET or struggling to engage consistently in school, training, or work
  - Are hospitalized for a mental illness in young adulthood
  - Have failed a class in post-secondary setting
  - Have had no place to call home in young adulthood
  - Have a diagnosis of bipolar disorder or schizophrenia

# Thank You!

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