Promoting Readiness of Minors in Supplemental Security Income (PROMISE): Youth's Pathways to Education and Employment

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Acronyms and Abbreviations

ASPIRE	Achieving Success by Promoting Readiness for Education and Employment
CaPROMISE	California PROMISE
DVR	Division of Vocational Rehabilitation
ED	U.S. Department of Education
GED	General Educational Development
MD	Maryland
N	Number
n.a.	Not applicable
NTACT	National Technical Assistance Center on Transition
NYS	New York State
OASDI	Old Age, Survivors, and Disability Insurance
PROMISE	Promoting Readiness of Minors in Supplemental Security Income
RA	Random assignment
SSA	Social Security Administration
SSI	Supplemental Security Income
VR	Vocational rehabilitation
WI	Wisconsin

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Executive Summary

Considerable research has examined the personal factors and practices associated with transition-age youth with disabilities achieving higher employment rates and greater self-sufficiency as adults, but there is limited evidence on the longer-term effectiveness of these practices and services. This study examines the role of youth's use of transition services and work experiences in the pathways that youth with disabilities followed to longer-term employment and education outcomes drawing on data from a federal initiative known as Promoting Readiness of Minors in Supplemental Security Income (PROMISE).

A. Study context and research questions

PROMISE aimed to improve the long-term self-sufficiency of youth receiving Supplemental Security Income by funding six programs to provide educational, vocational, and other services to youth and their families as well as improve service coordination between state and local agencies. The national evaluation, which used a random assignment (RA) study design, found that all six programs increased youth's use of transition services in the 18 months after RA and that some of the programs had longer-term impacts on youth's employment and income five years after RA (Mamun et al. 2019; Patnaik et al. 2022a). In this study, we use data from the PROMISE surveys to explore the following questions:

1. **Pathways to outcomes**

- What were the common education and employment pathways youth followed from RA to education and employment at the five-year follow-up?
- To what extent did pathways differ across the PROMISE projects and between treatment and control group youth?
- Did the pathways differ based on patterns of frequency and type of service use?
- What characteristics of youth are associated with the common pathways?

2. **Contribution of mediators to outcomes**

- To what extent did the PROMISE programs' early impacts on youth's use of key services contribute to the programs' average impacts on youth's five-year outcomes?
- Are the key PROMISE services identified as significant mediators of the programs' average impacts also significant mediators of program-specific impacts?
- To what extent can early impacts on other services and early employment experiences further explain the average impacts on youth's five-year outcomes?

B. Findings

The pathways (combinations of education and employment outcomes) that youth followed in the transition from adolescence to young adulthood were diverse. Despite the diversity, we identified three archetypes (profiles) of youth that represent three distinct patterns of transition experiences. About 44 percent of youth had the first profile ("high education and employment") involving five-year outcomes that were consistent with the goals of PROMISE: higher rates of employment, high school graduation, and postsecondary education enrollment, on average. About 44 percent of youth had the second profile ("low education and employment"); these youth were less likely to have completed high school, been enrolled in postsecondary education, or been recently employed at the time of the five-year survey. About

12 percent of youth had the third profile ("employed and not in postsecondary school"); many of these youth had completed high school and were working in the fifth year after RA but they were not enrolled in postsecondary school. Youth in the three profiles differed in terms of their age, impairments, and economic well-being five years after RA. Youth across the three profiles had different patterns of transition service use during the 18 months after RA; youth in the profiles with higher rates of education and employment had higher rates of service use. Consistent with the findings from the impact evaluation (Patnaik et al. 2022a), youth assigned to the treatment group were least likely to have the "low education and employment" profile.

Youth's use of employment services and paid work experiences likely played important roles in the programs' impacts on their five-year outcomes. Among the key services that PROMISE programs were required to provide, employment services stood out as an important mediator of impacts: at least some of the programs' average five-year impacts on youth's employment, earnings, and income operated through increasing the share of youth who used employment services in the 18 months after RA. Receipt of financial education and benefits counseling also were mediators of PROMISE's effects for some five-year outcomes. The programs increased the share of youth who used case management services and parents who received parent training and information on their youth's disability. However, these increases were associated with a reduction in youth earnings and increase in SSA payments five years after RA. There were differences across the six programs in the extent to which each service mediated the programs' five-year impacts, consistent with the variation in program implementation. Finally, early employment experiences and receiving help learning about getting into school or training were important mediators of the programs' five-year impacts. There is strong evidence suggesting that the programs' impacts on youth's employment, earnings, and income five years after RA is explained in part by the fact that the programs increased the share of youth who had a paid work experience during the 18 months after RA.

C. Implications for policy and practice

The diversity of youth's transition pathways suggests that diversified and customized service models are likely needed to effectively support youth transition, taking into account the needs and experiences of different subgroups of youth with disabilities. Transition programs might want to tailor service packages for youth, based on the youth's goals, constraints, and other factors associated with transition outcomes, including parents' characteristics and family circumstances. Ideally, program staff would work with youth and their families to collaboratively identify specific services from among an array of services offered or a customized intensity of services.

This study's findings add to a growing body of evidence that early work experiences are linked to better outcomes for youth with disabilities; research and practice must develop means to foster these experiences in an effective and scalable manner. Employment-promoting services were often an important mediator of the programs' effects, but the mediator that was consistently important for all of the five-year outcomes examined was youth participating in paid employment during the 18 months after RA. This suggests that employment-promoting services—especially those that help youth obtain early paid work experiences—can help get youth on a path to longer-term employment and economic well-being. But questions remain about how best to provide these services, because not all work experiences will lead to long-term impacts. The transition field needs more research to build a better understanding of how best to provide early work experiences for youth with disabilities, the key features of work experiences that result in better outcomes, how to involve other stakeholders (such as employers and families) in designing these experiences, and how to scale their delivery.

I. Introduction

Considerable research has examined the personal factors and practices associated with transition-age youth with disabilities achieving higher employment rates and greater self-sufficiency as adults. The predictors and practices with some evidence of success in improving youth outcomes encompass a wide range of factors, including school transition planning, life skills, work-based learning experiences, cross-agency collaboration, parents' expectations, family involvement, and benefits counseling (National Technical Assistance Center on Transition [NTACT] 2022; National Collaborative on Workforce and Disability 2019). Nonetheless, there is limited evidence on the longer-term effectiveness of most of these practices and services. In this study, we examine the role that youth's use of transition services and work experiences play in the pathways that youth follow to longer-term employment and education outcomes by drawing on data from an evaluation of a federal initiative to improve the long-term self-sufficiency of youth receiving Supplemental Security Income (SSI).

PROMISE—Promoting Readiness of Minors in SSI—was a joint initiative of the U.S. Department of Education (ED), the Social Security Administration (SSA), the U.S. Department of Health and Human Services, and the U.S. Department of Labor to support youth with disabilities receiving SSI in the transition to adulthood. Under cooperative agreements with ED, six entities across 11 states implemented demonstration programs for SSI recipients who were ages 14 to 16 at enrollment and their families. The programs were implemented in Arkansas (Arkansas PROMISE), California (CaPROMISE), Maryland (MD PROMISE), New York State (NYS PROMISE), Wisconsin (WI PROMISE), and a consortium of six states known collectively as Achieving Success by Promoting Readiness for Education and Employment (ASPIRE). The programs were intended to provide educational, vocational, and other services to youth and make better use of existing service systems and public resources by improving service coordination between state and local agencies. The programs began enrolling youth between April 2014 and October 2014 and continued enrolling through April 2016.

Under contract to SSA, Mathematica is conducting the national evaluation of the PROMISE programs, which adds to the evidence base on the effectiveness of transition services through a random assignment (RA) evaluation of the six programs. An 18-month impact study found that each program increased the likelihood that youth received transition services, including case management, benefits counseling, financial education, and employment-promoting services, as well as the likelihood that they had paid employment during the first 18 months after enrollment (Mamun et al. 2019). Each program also increased the likelihood that family members received support services, including parent training and information on their youth's disability, during that period. The five-year evaluation found that some programs had longer-term impacts on youth's employment (NYS PROMISE and WI PROMISE) and income (CaPROMISE, MD PROMISE, and WI PROMISE) five years after RA (Patnaik et al. 2022a).

In this study, we explore the pathways that youth followed on their way to achieving different five-year outcomes and the role that different services and work experiences might have played in contributing to the PROMISE programs' impacts on selected youth five-year outcomes. In doing so, this study complements the 18-month and five-year impact studies by exploring the context and mechanisms that contributed to the impacts of PROMISE. We examine the following research questions:

1. Pathways to outcomes

- What were the most common education and employment pathways youth followed from RA to education and employment at the five-year follow-up?

- To what extent did pathways differ across the PROMISE projects and between treatment and control group youth?
- Did the pathways differ based on patterns of frequency and type of service use?
- What characteristics of youth, such as age, sex, and impairment, are associated with the common pathways?

2. Contribution of mediators to outcomes

- To what extent did the PROMISE programs' early impacts on youth's use of key services contribute to the programs' average impacts on youth's five-year outcomes?
- Are the key PROMISE services identified as significant mediators of the programs' average impacts also significant mediators of program-specific impacts?
- To what extent can early impacts on other services and early employment experiences further explain the average impacts on youth's five-year outcomes?

II. Study Context, Data, and Methods

For this report, we conducted several types of analyses to examine the pathways that youth followed during the five years after their enrollment in the PROMISE evaluation and the mechanisms that likely contributed to the PROMISE programs' five-year impacts. This chapter describes the study context and the data sources and analytic methods we used for the analyses. In Section A, we describe the PROMISE demonstration and evaluation. In Sections B, C, and D, we describe the data, sample, and methods.

A. Study context

ED funded the PROMISE programs to provide educational, vocational, and other services to promote positive change in the lives of youth who received SSI and their families. Based on their review of the literature, input from the public, and consultation with subject matter experts, the federal partners that sponsored PROMISE determined that it should include two main features: (1) strong partnerships between the federal, state, and local agencies that offer services to SSI youth and their families; and (2) an individual- and family-centered approach to case management and service delivery. They also required the PROMISE programs to provide the following services: (1) case management; (2) benefits counseling; (3) financial education; (4) career and work-based learning experiences for youth; as well as (5) training and information to educate parents and family members about their youth's disability, education needs, and transition processes and the family members' own needs. These services were chosen because they each have some evidence of effectiveness in supporting youth's transition to adulthood (Honeycutt et al. 2018a), although career and work-based learning experiences are supported by the strongest body of evidence (Luecking et al. 2018; Fraker et al. 2018; Sevak et al. 2021; Mazzoti et al. 2021).

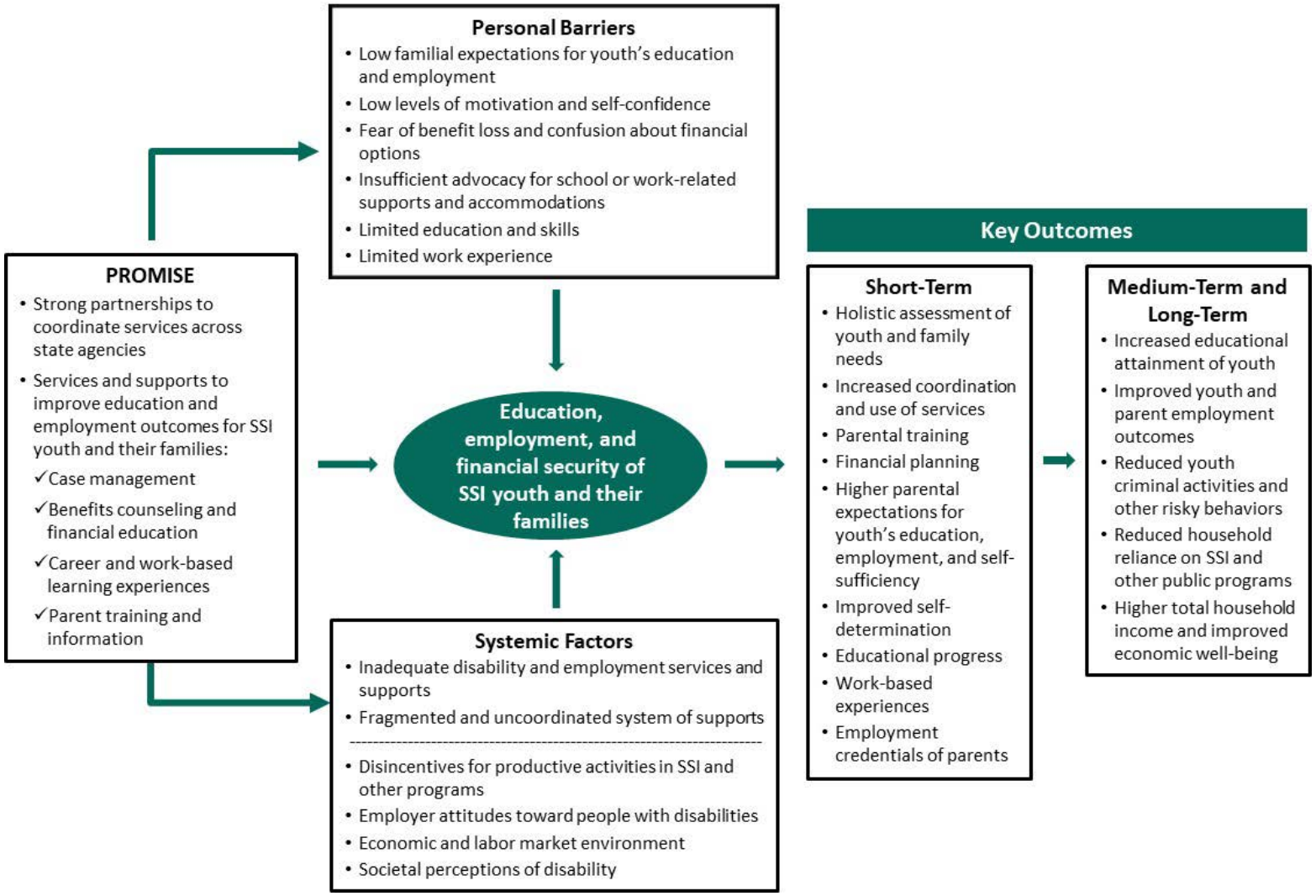
Figure II.1 shows the conceptual framework underlying PROMISE. It illustrates how the core components were expected to improve youth's outcomes by addressing some of the personal barriers to economic self-sufficiency that youth receiving SSI might face, such as fear of benefit loss, as well as some of the systemic factors, such as inadequate services. Each program varied in its implementation of the core components because the federal partners did not prescribe how they should be implemented. Each program developed its own logic model that reflected the state's (or the consortium's) experience with youth receiving SSI, understanding of best practices for serving youth with disabilities, and familiarity with the local transition environments. In other reports, we describe how the programs implemented the PROMISE conceptual framework (Anderson et al. 2018; Honeycutt et al. 2018b; Kauff et al. 2018; Matulewicz et al. 2018a; McCutcheon et al. 2018; Selekman et al. 2018).

We conducted an impact evaluation to assess whether the PROMISE programs achieved the intended improvements in the short- and long-term outcomes shown in Figure II.1. The target number of youth enrolled in the PROMISE evaluation was 2,000 for each program except CaPROMISE, which had a target of about 3,000. Under the RA design, half of the youth who enrolled in the evaluation of each program were placed in a treatment group and could receive PROMISE services, while the rest were placed in a control group and could only receive the services available in their communities independent of PROMISE. RA produced two groups of youth with similar pre-intervention characteristics, on average (Mamun et al. 2019). Thus, the estimated impacts of the programs are the differences in the average outcomes of the two groups.

In other studies, we found evidence of short- and longer-term impacts. During the first 18 months after enrollment, each program increased the shares of youth that received transition services (including the

required services) and had paid employment experiences, and whose family members received support services (including parent training and information on their youth's disability) (Mamun et al. 2019). Some programs had longer-term impacts; for example, two programs increased youth's employment (NYS PROMISE and WI PROMISE) and three (CaPROMISE, MD PROMISE, and WI PROMISE) increased youth's income from earnings and SSA payments five years after RA (Patnaik et al. 2022a). In this study, we leverage the experimental design and data from the evaluation to explore the pathways that youth receiving SSI followed on their way to achieving different five-year outcomes and examine the role that transition services and work experiences played in the PROMISE programs' five-year impacts.

Figure II.1. PROMISE conceptual framework



Source: Adapted from Fraker et al. (2014).

B. Data

We used four data sources: (1) surveys of youth and parents conducted 18-months and five years after RA, (2) SSA administrative data, (3) administrative data on vocational rehabilitation (VR) cases (from the Rehabilitation Services Administration), and (4) the PROMISE RA system. We surveyed youth and their parents (using separate instruments) 18 months after RA to gather information about use of services, outcomes, and youth and family characteristics. We also surveyed them five years after RA to collect information on their educational, employment, and economic outcomes. SSA administrative data provided information on SSI and Old-Age, Survivors, and Disability Insurance (OASDI) payments and youth demographic characteristics (such as age, sex, and primary impairment). The RA system captured some additional data, such as the enrolling parent's relationship to the youth. Patnaik et al. (2022b) provide more detailed information about these data sources and our approach for addressing missing data.

C. Sample

The main analytic sample for this study includes 8,056 youth across the six programs who completed the 18-month and the five-year surveys and whose parents completed the 18-month survey. Because inclusion in the sample is based on response to both youth surveys and one parent survey, the study sample is a subset of the analysis sample used in the five-year impact study. The sample for this study represents about 77 percent of the PROMISE enrollees who were eligible for the surveys; about 21 percent did not respond to at least one of the surveys, and another 2 percent did not respond to specific survey questions required for the analysis, such as questions about service use. For five-year outcomes measured in administrative data, the sample can be larger than the main analytic sample because it includes youth who did not complete the five-year survey if they and their parents completed the 18-month surveys. We used weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling.

D. Methods and measures

We examined data pooled across the six PROMISE programs and across time for our primary analyses. We gave equal weight to each program so that they contributed equally to our estimates of average effects and associations. Because the six projects varied in their implementation of the required services and their five-year impacts on youth outcomes, we also conducted supplementary analyses where we examined each program separately. We present the results of the program-specific analyses in the appendix.

To characterize youth's pathways to employment and education, we use sequence and cluster analysis. First, we used sequence analysis to summarize and categorize pathways—or longitudinal patterns of youth's outcomes over the five years after enrollment in the evaluation. Next, we used cluster analysis to group youth pathways into archetypes, which we call profiles. Then, we examined the composition of individuals associated with the profiles, including differences in treatment and control group membership, the programs they attended, and demographic characteristics. Finally, we used multinomial modeling to assess whether there are any associations between youth's uptake of transition services offered by PROMISE and patterns of employment and education over time.

We used mediation analysis to explore the sources of the PROMISE programs' five-year impacts on youth outcomes. To do so, we examined the extent to which the effects of the programs on five-year outcomes operated through the channel of increasing the likelihood that youth and families used the key transition services required by the cooperative agreements. These findings shed light on the mechanisms that contributed to the changes in outcomes observed in PROMISE treatment group youth.

Below, we describe our methodological approach to each analysis. More details are available in the Appendix.

1. Profiling youth's transitions to adulthood

We began by selecting "states" (or outcomes) that would form the building blocks of the youth profiles. We focused on nine states across the five years after RA (Table II.1). We selected these states based on their relevance to PROMISE's goals, focusing on outcomes related to education, training, and employment that were examined previously in the 18-month or five-year impact analyses (Mamun et al. 2019; Patnaik et al. 2022a). We also selected states based on the characteristics of the measures, such as their sample sizes and variation. Because we were interested in the role that family factors might play in youth's pathways, we chose states that include both youth and parent outcomes. Table II.1 lists the nine states and describes the survey measures used to define them.

We did not examine baseline states, that is, states prior to enrollment in the evaluation. We did not have baseline data on youth education, training or expectations. Although we could access administrative measures of youth employment at baseline, a baseline measure of employment would offer little variation because only 3 percent of youth worked in the year before RA. However, our analyses control for the characteristics of youth at the time of RA (see Appendix).

Table II.1. 18-month and five-year states examined in youth's pathways

State	Measure
18-month states (measured at the time of the 18-month survey)	
Youth was enrolled in school or training program	Whether youth was enrolled in any type of school or college at the time of the 18-month survey
Youth was employed in a paid job since RA	Whether youth was ever employed in a paid job in the 18 months following RA
Youth received any job training since RA	Whether youth had attended any training program or taken any classes outside of school to help them learn job skills or get a job since RA
Parent expected youth to be financially independent at age 25	Whether parent (or their spouse/partner) expected youth to be financially independent at age 25
Parent was employed in a paid job since RA	Whether parents (or their spouse/partner) were employed for pay since RA
Parent received any education or job-skills training since RA	Whether parent (or their spouse/partner) received any diploma, GED, certificate, or professional license, went to school, or attended a training program or classes to improve job skills in the 18 months following RA
Five-year states (measured at the time of the five-year survey)	
Youth has a high school completion credential	Whether youth had a high school diploma, GED or certificate of high school completion
Youth was employed in a paid job in the past year	Whether youth was ever employed in a paid job in the past year
Youth was enrolled in postsecondary education	Whether youth was enrolled in any type of postsecondary school

GED = General Educational Development; RA = random assignment.

We began by identifying the "pathways" (or combinations of the nine states) reported by the 7,505 youth for whom we had complete information on the nine states. There are many possible pathways that youth might have taken, though some are more or less likely. The number of potential pathways is in part a function of the number of states; thus, although there are many potential states of interest that one can examine, we limited the analyses to nine states to constrain the variation in pathways to a reasonable level and retain a sufficiently large sample size. We grouped pathways based on their frequency in the analytic sample using sequence analysis to identify common pathways. Sequence analysis is a statistical technique that identifies patterns in the ordering and timing of complex longitudinal processes. We used sequence analysis to order, summarize, and describe the possible pathways that youth in the treatment and control groups followed.

Next, we used cluster analysis to build "profiles" (or typical pathways) of youth. Cluster analysis is an algorithmic method of grouping observations based on similar characteristics through an iterative sorting process. After the sequence analysis identified a pathway for each youth, the cluster analysis algorithm iterated through the 7,505 observed pathways to organize youth into groups based on how closely their pathways aligned to each other. Then, for each group, it identified the most common pathway within the group, which became the profile of that group. Each youth is associated with only one profile, which is the one that most closely reflects (but might not exactly match) their own pathway. To select the optimal number of profiles, we relied on goodness-of-fit-statistics from the algorithm and our knowledge of the goals of PROMISE. We ultimately selected three profiles that represent archetypes of youth's pathways during the five years after RA.

After assigning youth to one of the three profiles, we compared the youth across the profiles. When conducting comparisons across profiles, we weighted statistics to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. We used two methods for these comparisons. First, we examined differences across the profiles in the characteristics of youth as well as indicators of well-being at the five-year follow-up. We used chi-squared statistical tests to identify statistically significant differences across the groups of youth associated with the profiles. Second, we assessed associations between youth's patterns of service use during the 18 months after RA and their different profiles. We used a multinomial logit model to estimate differences in service use across youth in different profiles while controlling for some youth characteristics, including those in which we detected significant differences between the treatment and control groups within the analytic sample.

2. Examining the mechanisms behind the PROMISE programs' five-year impacts

Because the PROMISE model comprised multiple components, there is interest in understanding the mediating pathways through which the interventions affected youth outcomes. We decomposed the total effect of PROMISE into two components: (1) the indirect effects of PROMISE that operate through mediators such as services and work experiences and (2) the direct and unattributed effect (hereafter called the unattributed effect) that operated through alternative pathways besides the mediators.

We examined the sources of the PROMISE programs' effects on five-year outcomes in terms of potential mediators, such as use of transition services and early work experiences. We selected 10 five-year outcomes for this analysis based on three criteria (Table II.2). First, the outcome must have been a primary outcome for the five-year impact analysis—that is, it was the basis for testing the main hypotheses related to the impacts of the programs (Patnaik et al. 2022a). Second, the estimated average impact of the PROMISE programs on the outcome must have been statistically significant or close to

significant ($p = 0.10$). Finally, the outcome must be measured in the data sources listed in the previous section.

Table II.2. Five-year outcomes decomposed in the mediation analysis

Domain	Outcome	Programs that had a significant impact
Education	Has a GED, high school diploma, or certificate of completion	Pooled, ASPIRE
	Enrolled in an educational or training program	NYS PROMISE
Employment	Employed in a paid job in the past year	Pooled, NYS PROMISE, WI PROMISE
	Earnings in the past year ($)	All PROMISE programs
Self-determination	Youth expects to be financially independent at age 25	Pooled, NYS PROMISE
SSA payments	Received SSA payments in Year 5	Pooled, MD PROMISE
	SSA payments during Years 1 to 5 ($)	Pooled, MD PROMISE
	Total SSA payments in Year 5 ($)	MD PROMISE
Well-being	Income from earnings and SSA payments in the past year ($)	Pooled, CaPROMISE, MD PROMISE, WI PROMISE
	Covered by any health insurance	Arkansas PROMISE

Source: Patnaik et al. 2022a.

Note: Pooled refers to average impacts estimated by pooling data across the six programs.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California PROMISE; GED = General Educational Development; MD = Maryland; NYS = New York State; SSA = Social Security Administration; WI = Wisconsin.

We examined 10 potential mediators measured via the 18-month surveys and Rehabilitation Services Administration-911 data (Table II.3). We selected mediators from among the outcomes studied in the 18-month impact analysis (Mamun et al. 2019). We began by focusing on five mediators that were key outputs to achieving better youth transition outcomes in the programs' logic models. These include youth's use of (1) case management, (2) benefits counseling, (3) financial education, and (4) employment-promoting services (including VR services), and (5) parents' use of training and information about the youth's disability. Hereafter, we refer collectively to these five mediators as "key services". Most of the key services correspond to transition services that are considered effective for improving education and employment outcomes according to the *Guideposts for Success* and NTACT predictors of postsecondary outcomes (Larson and Bolton 2019; NTACT 2022, Honeycutt et al. 2018a). Because the programs varied in their implementation of the key services, we also examined the key service mediators in separate analyses of each program.

In addition to the key services, we examined an expanded set of potential mediators representing youth's use of other services considered to be effective practices and other experiences during the 18 months after RA (Table II.3, bottom panel). We examined youth's receipt of help with life skills or help learning about or getting into a school or training program, whether youth attended a job-related training program, and whether youth was employed in a paid job during the 18 months after RA. These practices and experiences might be expected to promote education and employment in the long term. We did not examine the potential role of family support services focused on improving parents' outcomes, such as training to learn new job skills or help with finding or applying for a job. Although such services might

affect youth's long-term outcomes, they would work indirectly through the parents' outcomes, and the five-year impact evaluation found that the programs had almost no impacts on parents' outcomes (Patnaik et al. 2022a). With one exception, we measured all mediators using survey data.[1]

The resulting measures have two strengths. First, they offer a comprehensive view of services by including those obtained from sources other than the PROMISE programs. Second, they capture services used by not only treatment group youth but also control group youth, more than half of whom used at least one of the key transition services during the 18 months after RA (Patnaik et al. 2021). However, the measures reflect only services as they are defined in the survey questions (Table II.3, column 2). We designed the questions to broadly capture the concepts underlying the services required by the cooperative agreements, based on information from the programs' applications for the PROMISE awards and our understanding of the goals of PROMISE. We discuss this data limitation further in Chapter V.

[1] We included VR services as a type of employment-promoting service. We used administrative data from the Rehabilitation Services Administration to measure youth's use of VR services during the 18 months after RA. We used this information, along with survey data on youth's use of employment services, to develop the 18-month measure of youth receipt of employment-promoting services.

Table II.3. Potential mediators, measures, and corresponding effective practices

Potential mediator	Measure of mediator	Corresponding effective practice	
		Guideposts for Success	NTACT matrix
PROMISE key services			
Youth received employment-promoting services	Participated in activities to help [him/her] learn about what jobs match [his/her] skills and interests; had help in finding or applying for a job; had any help while working at a job, such as help with job accommodations or learning job duties; or developed an individualized plan for employment through VR	Connections to programs, services, activities, and supports to gain access to post-school options	Student support; paid employment and work experience
Youth received case management	Worked with anyone to determine [his/her] needs and help connect [him/her] to services and supports related to education, employment, health, housing, or anything else	Connections to programs, services, activities, and supports to gain access to post-school options	Student support
Youth received benefits counseling	Help in understanding Social Security, SSI, or other program benefits and rules	Benefits counseling	Not listed by NTACT as a postsecondary outcome predictor but included as a VR service practice
Youth received financial education	Help learning about how to save and manage money	Connections to financial planning and management	n.a.
Parent received training and information about the youth's disability	Help learning about youth's disability and how to get the services or supports they need or had training on how to support their independence	Parents' understanding of their youth's disability and how it affects his or her education, employment, and daily living options; access to programs, services, supports, and accommodations available for young people with disabilities	Parents, families, and guardians are active and knowledgeable participants in all aspects of transition planning (promising practice)

Potential mediator	Measure of mediator	Corresponding effective practice	
		Guideposts for Success	NTACT matrix
Additional PROMISE services and components			
Youth received help with life skills	Taught skills needed for everyday activities. This includes skills such as telling time, interacting with people socially, or using public transportation	n.a.	Self-care and independent living skills
Youth received help learning about or getting into a school or training program	Help with learning about or getting into a school or training program, including help with an application, entrance exam, or interview	Career awareness	Career awareness
Youth attended a job-related training program	Attended a training program or took classes outside of school to help them learn job skills or get a job	Connections to programs, services, activities, and supports to gain access to post-school options	Student support; paid employment and work experience
Youth was employed in a paid job	Worked at a job or a business and was either paid or received income through self-employment	Opportunities to engage in a range of work-based exploration activities	Paid employment and work experience

Note: All mediators are measured over the 18 months following RA. We measured whether youth developed an individualized plan for employment through VR using administrative data; we measured other mediators using data from 18-month parent and youth surveys.

n.a. = not applicable; NTACT = National Technical Assistance Center on Transition; RA = random assignment; SSI = Supplemental Security Income; VR = vocational rehabilitation.

To examine the mechanisms behind the PROMISE programs' five-year impacts, we coupled the variation in youth's exposure to PROMISE services through RA with an econometric decomposition, or mediation analysis method (Heckman et al. 2013; Heckman and Pinto 2015; Kautz and Zanoni 2015). This approach used the RA design of the PROMISE evaluation and the longitudinal nature of the data to investigate the links between the impacts of PROMISE on 18-month outcomes and the five-year outcomes.

We used a two-step method. In the first step, we estimated the average impact of the PROMISE programs on each mediator, using a linear regression model for each mediator. We used regression adjustment to compare average outcomes between the treatment and control groups. For all regression models, we included a key set of covariates and any covariates for which we found imbalance between the treatment and control groups at baseline. In the second step, we estimated the average effect of the PROMISE programs on the five-year outcomes after controlling for the effects of the mediators on the outcomes, using a regression model for each outcome. Note that the average effect estimated in the second step will differ from the five-year impact estimates reported in Patnaik et al. (2022a) because of differences in the analytic sample, weights, and covariates (see Appendix Table A.1).

The two-step procedure enabled us to investigate how the mediators affected the five-year outcomes and understand the indirect effect of PROMISE through each mediator. The indirect effect of PROMISE through a mediator can be interpreted as the marginal effect of PROMISE changing a mediator (for example, from youth not using case management to using it) on mean outcomes, while holding constant the other measured mediators. The unattributed effect can be interpreted as the direct effect of the program on the outcome that cannot be explained by the mediators examined in the model. The total effect is the sum of these two effects. However, this method does not account for the confounding effect of unmeasured mediators. In other words, the estimated indirect effects through mediators do not account for changes in other determinants of youth outcomes that PROMISE might have generated.

Three types of program effects

Indirect effects: The effects through one or more mediator

Unattributed effect: The effect of a program through all channels except the mediators examined

Total effect: Sum of the indirect and unattributed effects

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III. Profiles of Youth's Transitions to Adulthood

Understanding the paths young people with disabilities travel on their way to adulthood can provide a context for the programs and policies designed to help them achieve success. In this section, we present findings on these pathways for PROMISE youth by investigating the relationships between youth and parent outcomes during the first 18 months after RA and youth's five-year outcomes. We find a significant degree of diversity in the pathways that youth follow in the transition from adolescence to young adulthood. In the subsections below, we discuss common combinations of these outcomes (pathways) and present three archetypes (profiles) of youth that represent three distinct patterns of transition experiences. We also describe associations between youth's and parents' characteristics, five-year outcomes, and youth's service use patterns with the three profiles.

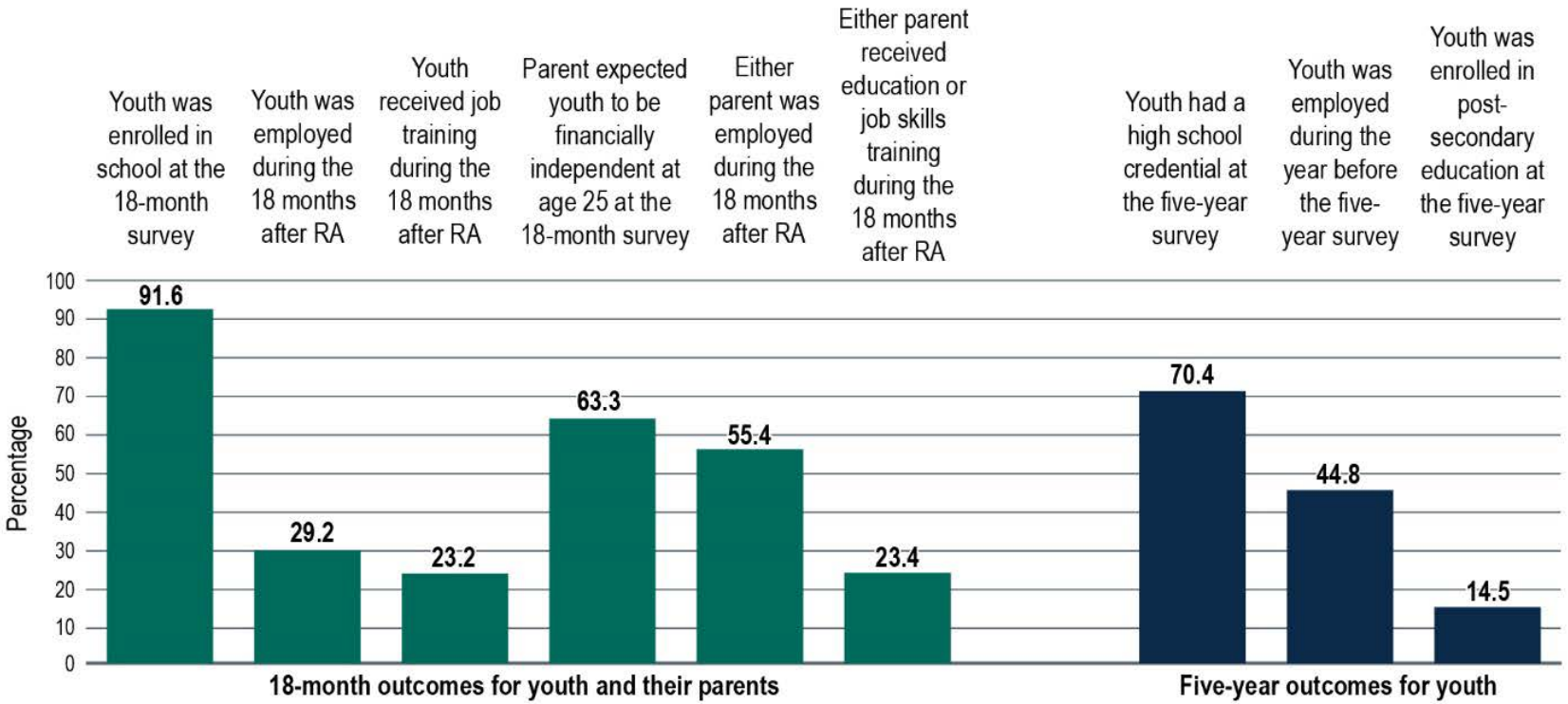
A. Common pathways for youth

Figure III.1 shows the distribution of states for youth. At the 18-month follow-up, most youth (92 percent) were enrolled in school, about 29 percent had paid employment since RA, and 23 percent had attended a job-related training program. Among families, about 55 percent had at least one parent employed during the 18 months after RA and 23 percent had at least one parent receive job training during that period. At the time of the 18-month survey, about 63 percent of parents expected the youth to be financially independent by age 25. As expected, youth's educational and employment states had improved by the five-year follow-up, when about 70 percent of youth had obtained a high school credential and 45 percent had been employed in a paid job in the previous year, though only 15 percent were enrolled in postsecondary education.

Though the distribution of states was similar across the six programs, some differences exist (Appendix Figure A.1). At the time of the five-year survey, Arkansas PROMISE had the largest share of youth who had a high school diploma or equivalent credential (80 percent), CaPROMISE had the largest share of youth enrolled in postsecondary education (26 percent), and WI PROMISE had the largest share of youth with paid employment in the previous year (55 percent).

We found substantial diversity in youth's pathways. We identified 352 unique pathways or combinations of states followed by the youth in the analytic sample. In other words, about 1 in every 25 youth shared a combination of the 18-month and five-year states. Looking at each program separately, there is similar diversity in youth's pathways (Appendix Table A.2). The 10 most common pathways represented between 26 percent (WI PROMISE) and 38 percent (NYS PROMISE) of all observed pathways in each program.

Figure III.1. Percentage of PROMISE enrollees in each state at 18 months and five years after RA



Note: The figure shows the unweighted shares of youth who attained each state at the 18-month and five-year follow-ups. The analytic sample includes youth who completed both the 18-month and five-year follow-up surveys and whose parents completed the 18-month survey.

RA = random assignment.

To better understand the pathways, we examined the 10 most common pathways in more detail (Figure III.2). Though these pathways are more common than others, together they still only represent 32 percent of all youth. In other words, these are the most populated pathways among the 352 observed, but the majority of youth followed other pathways. Within the most common pathway (3.9 percent of all youth, illustrated by Pathway 1 in the top-most row in Figure III.2), youth were enrolled in school and had not been employed in a paid job or attended a job-related training program since RA at the time of the 18-month survey; they were neither employed nor enrolled in postsecondary education at the time of the five-year survey. At the time of the 18-month survey, their parents had not been employed or received job training since RA and expected them to be financially independent by the age of 25. In the second most common pathway (3.7 percent of youth, illustrated by Pathway 2 in the second-to-top row), youth experienced similar states to those described above, with the exception that their parents did not expect them to be financially independent by age 25.

In terms of the five-year outcomes, high school completion was part of more common pathways than enrollment in postsecondary education. The six most common pathways included youth having a high school diploma or equivalent credential. None of the 10 most common pathways include youth enrolled in postsecondary education at the time of the five-year survey. The 7th through 10th-most common pathways (Pathways 7–10) involved paid employment in the year before the five-year survey.[2]

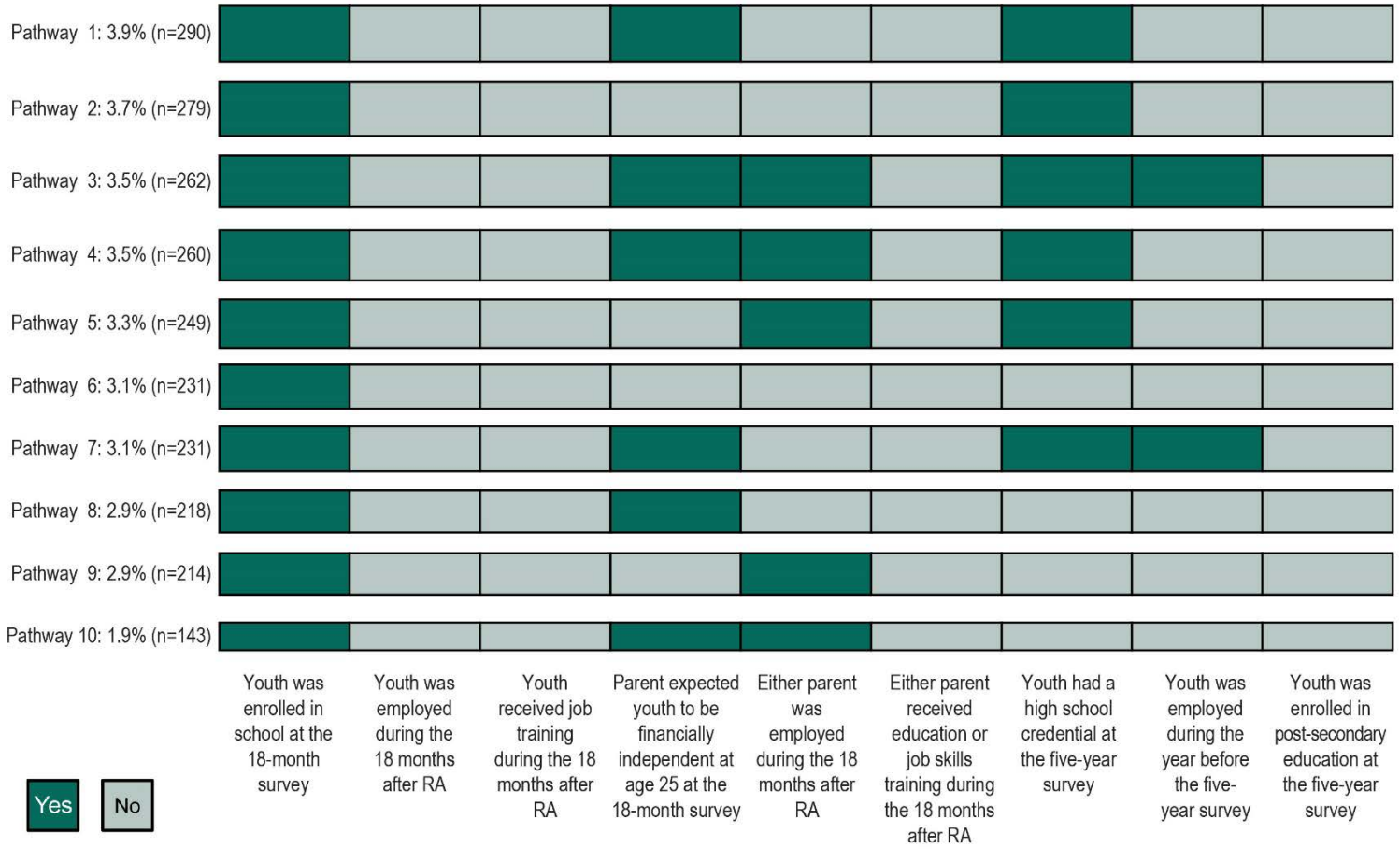
Even among the youth who achieved each of the five-year outcomes (obtained a high school credential, were enrolled in postsecondary education, or had paid employment, respectively), the pathways are diverse:

- Among youth who completed high school, 5 the 10 most common pathways include youth who were employed in a paid job in the year before the five-year survey (Figure III.3).
- Among youth who were employed in the year before the five-year survey, 6 of the 10 most common pathways include youth being employed during the 18 months after RA (Figure III.4). None of the 10 most common pathways for employed youth included being enrolled in postsecondary education, consistent with the idea that youth might face trade-offs between higher education and employment.

Among youth enrolled in postsecondary education at the time of the five-year survey, the pathways are less diverse (Figure III.5); the 10 most common pathways represent nearly half of all pathways followed by these youth. This might be because youth who are currently enrolled in postsecondary education represent only 15 percent of all youth (Figure III.1) and have less variation in their states. Common pathways for this subgroup are characterized by larger shares of parents with expectations of the youth's financial independence and who were themselves employed or received job training during the 18 months after RA. As expected, all youth enrolled in postsecondary education had obtained a high school diploma or equivalent credential.

[2] In supplementary analyses (Figures A.8 and A.9), we found that the most common pathways differed by youth's age, as might be expected. Among the 10 most common pathways for youth who were age 16 at RA, two involved being employed during the 18 months after RA, four involved being employed in the year before the five-year survey, and eight involved having a high school diploma or equivalent credential at the time of the five-year survey. Whereas, among the 10 most common pathways for youth who were ages 14 or 15 at RA, the number of pathways with these states were zero, two, and six, respectively. These differences are not surprising given the relative ages of the groups; the pathways of the two groups might become more similar as they grow older. For both groups, none of the 10 most common pathways involved enrollment in postsecondary education at the time of the five-year survey.

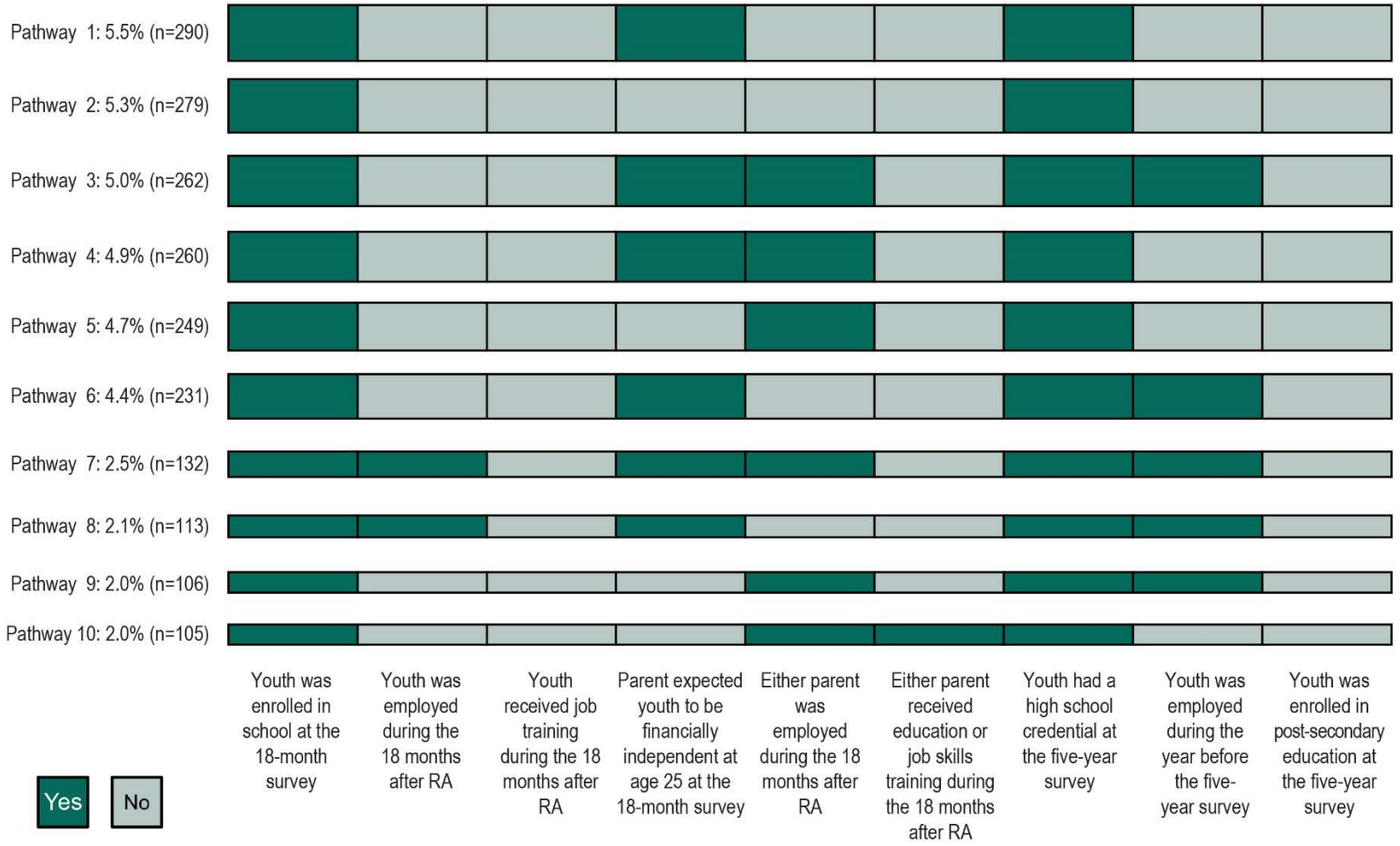
Figure III.2. Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for PROMISE youth, which represent 31.7 percent of all youth enrollees. Each pathway is represented by one color-coded row that shows whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked so that the most common pathway is at the top of the figure and subsequent pathways below it represent fewer youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

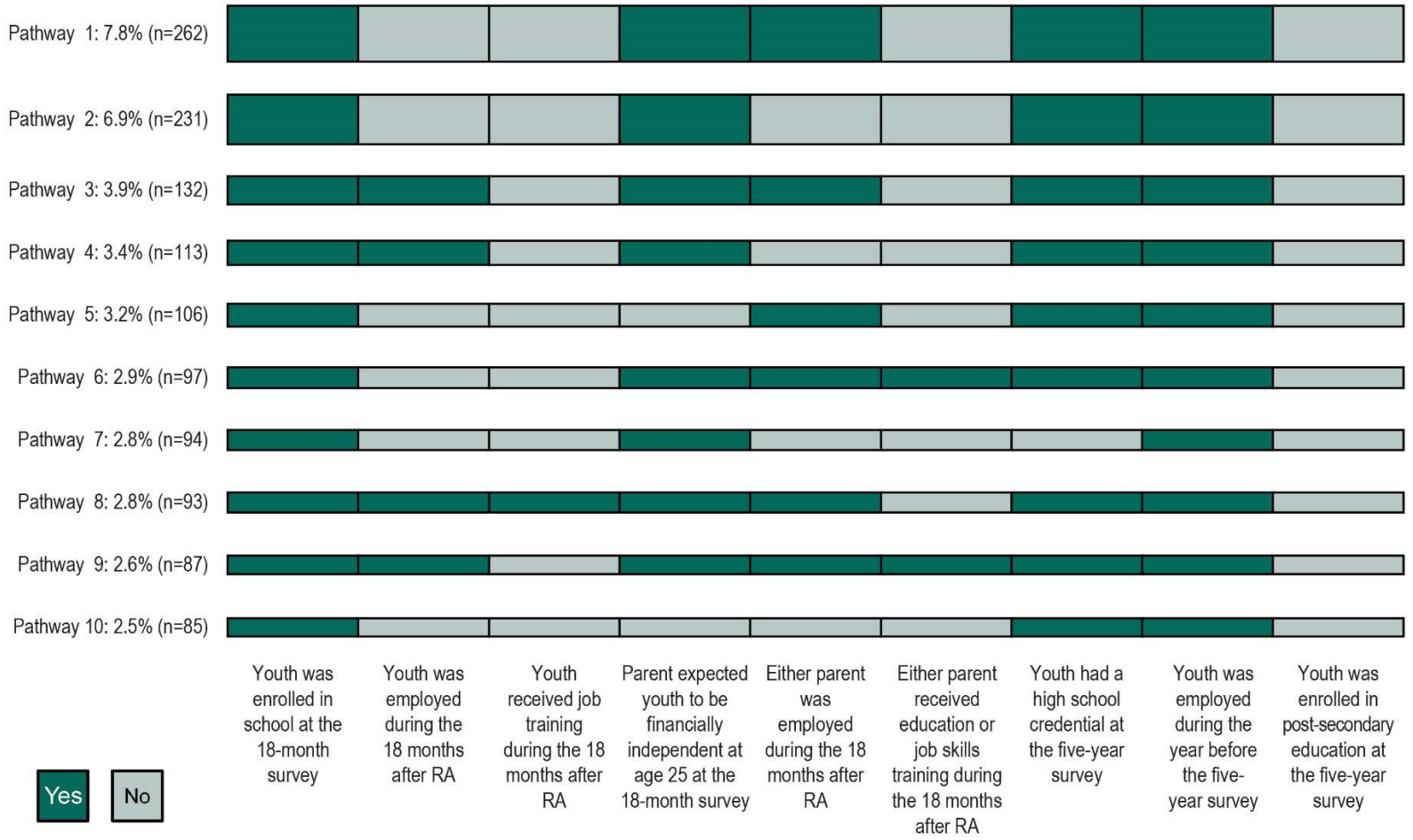
Figure III.3. Ten most common pathways among youth with a high school credential at the time of the five-year survey



Note: This figure represents the 10 most common pathways for youth who completed high school, for the pooled sample of PROMISE youth enrollees. Each pathway is represented by one color-coded row that shows whether youth did or did not have the outcome listed on the axis and can be read from left to right. Pathways are stacked so that the most common pathway is at the top of the figure and subsequent pathways below it represent fewer youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

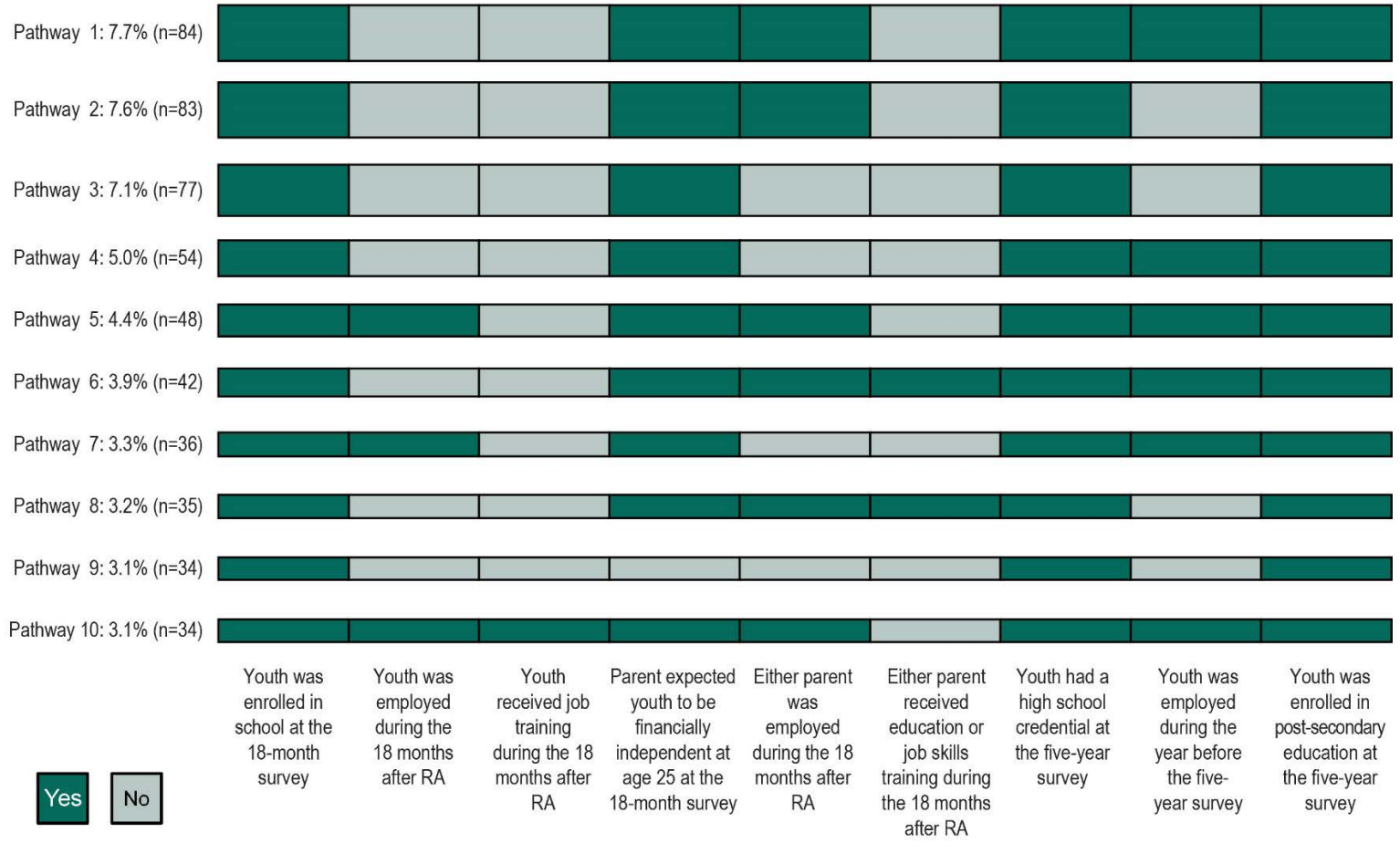
Figure III.4. Ten most common pathways for PROMISE youth who were employed in a paid job in the year before the five-year survey



Note: This figure represents the 10 most common pathways for youth who had paid employment in the year prior to the five-year survey, for the pooled sample of PROMISE youth enrollees. Each pathway is represented by one color-coded row that shows whether youth did or did not have the outcome listed on the axis and can be read from left to right. Pathways are stacked so that the most common pathway is at the top of the figure and subsequent pathways below it represent fewer youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

Figure III.5. Ten most common pathways for PROMISE youth were enrolled in postsecondary education at the time of the five-year survey



Note: This figure represents the 10 most common pathways for youth who were enrolled in postsecondary education at the time of the five-year survey, for the pooled sample of PROMISE youth enrollees. Each pathway is represented by one color-coded row that shows whether youth did or did not have the outcome listed on the axis and can be read from left to right. Pathways are stacked so that the most common pathway is at the top of the figure and subsequent pathways below it represent fewer youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

B. Three profiles of youth's education and employment pathways

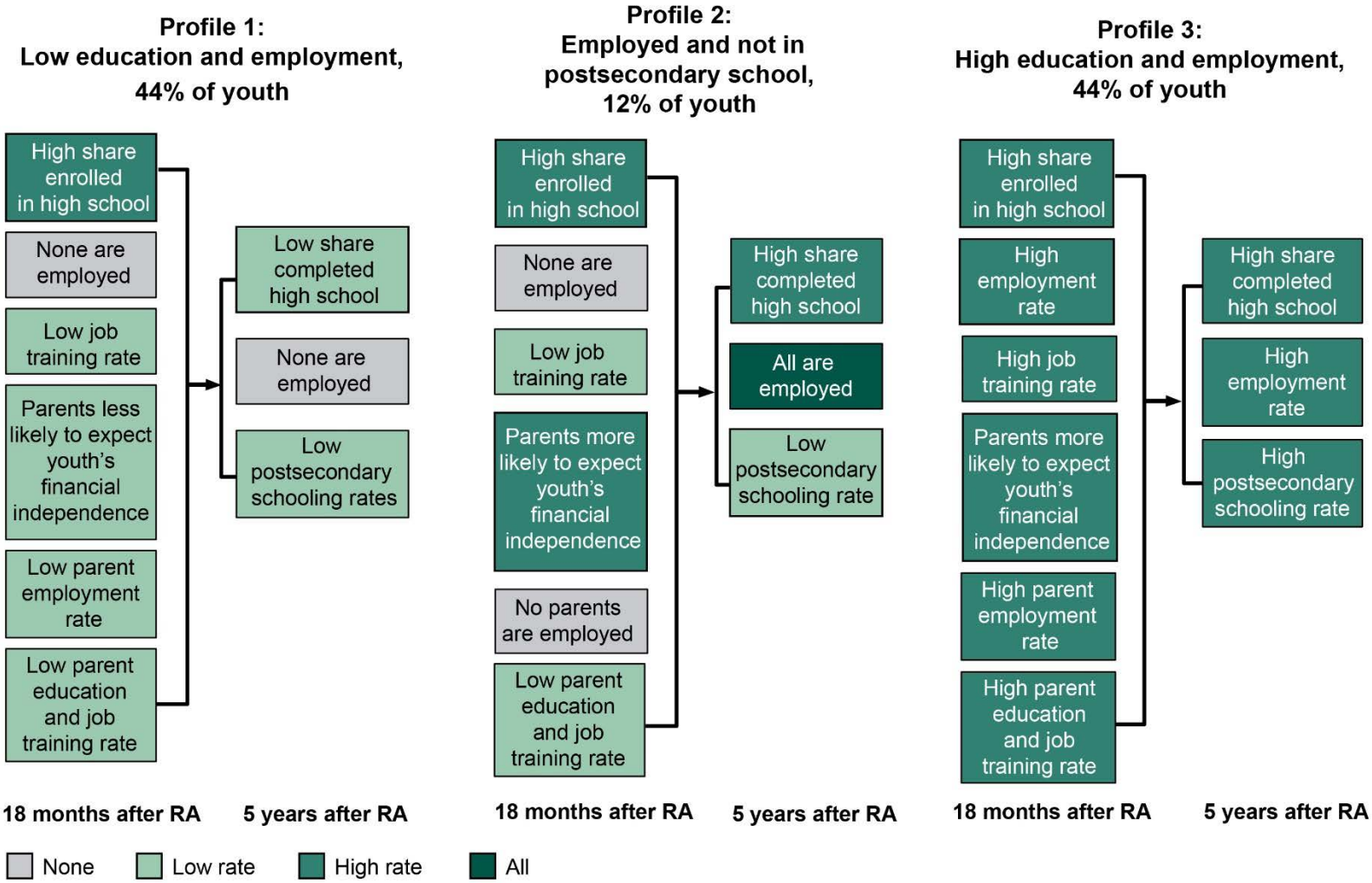
To synthesize the diverse pathways of PROMISE youth, we used cluster analysis to group youth and then developed profiles that represent archetypes of each group's pathways. We identified three profiles of youth's outcomes and experiences across the five years since RA (Figure III.6) from all of the observed youth pathways. As a reminder, these profiles do not necessarily overlap with the 10 most common pathways that youth followed (Figure III.2), but, rather, they synthesize of all the various pathways of education and employment for youth (Appendix Table A.3). The three profiles, described in more detail below, typify three groups of youth according to their five-year outcomes: (1) youth that have "low education and employment," (2) youth that are "employed and not in postsecondary school," and (3) youth that have "high education and employment."

The first profile, representing youth with **low levels of education and no employment** at the five-year follow-up, accounts for 44 percent of the youth in the sample. Relative to the other two profiles, youth in this profile were less likely to have completed high school or been enrolled in postsecondary education at the time of the five-year survey than on average, and they did not have any paid employment during the 18 months after RA nor in the year before the five-year survey. Their parents had lower rates of employment and job training during the 18 months after RA and a lower share of their parents expected them to be financially independent by the age of 25, compared to average.

The second profile, representing 12 percent of the sample, captures youth who were **employed and not in postsecondary school**. Youth with this profile were less likely to be enrolled in postsecondary education than average, but all had paid employment in the year before the five-year survey. Compared with the average family, youth with this profile typically had lower rates of job training both for themselves and their parents during the 18 months after RA. Similar to the first profile, youth in this profile had no employment during the 18 months after RA. For youth with this profile, their parents were not employed and were less likely to have received training during the 18 months after RA, but a relatively high share of parents expected their youth to be financially independent at age 25. This hints at the idea that youth with this profile might have family factors or circumstances that nudge them towards employment rather than postsecondary education at the five-year follow-up.

The third profile, characterized by **high likelihood of employment and high levels of education**, represents the final 44 percent of the sample. Youth with this profile had outcomes at the time of the five-year survey that were consistent with the goals of PROMISE. They had higher rates of employment, high school graduation, and postsecondary education enrollment. Likewise, at the time of the 18-month survey, their parents were more likely to have been employed, received job training, and expected youth to be financially independent at age 25.

Figure III.6. Education and employment profiles of PROMISE youth



Note: "Low" refers to shares of the outcome in the profile that are below the average across all youth in the sample and "High" refers to shares of the outcome in the profile that are above the average across all youth. See Appendix Table A.3 for shares of youth in each state across the three profiles.

RA = random assignment.

C. Differences in youth characteristics and well-being across the three profiles

The characteristics of youth differed across the profiles (Table III.1). Youth in the "high education and employment" profile were older at enrollment, on average. This is partly expected as an artifact of aging; youth are more likely to achieve certain transition markers as they age into young adulthood. It is consistent with the finding from supplementary analyses (Figures A.8 and A.9) that more of the most common pathways for youth who were age 16 at RA involved employment and high school completion, compared with youth who were ages 14 or 15 at RA. Youth with intellectual or development disabilities and physical disabilities are more highly concentrated in the "low education and employment" profile, suggesting youth with these impairments are less likely to have completed high school or go on to postsecondary education. This is consistent with evidence that youth with intellectual and development disabilities experience poorer outcomes, on average, than youth with other types of impairments (Sanford et al. 2011; Newman et al. 2011a, 2011b). Youth with the "high education and employment" profile were least likely to have any parent receiving any SSA payments at RA while those in the "employed and not in postsecondary school" profile were most likely to do so. Although there were differences in the sex and racial and ethnic composition of youth in the three profiles, we did not discern a meaningful pattern in the differences.

PROMISE treatment group youth were more likely to be in the "high education and employment" profile, meaning they had higher rates of employment and postsecondary education. They were also slightly more likely to be in the "employed and not in postsecondary school" group, relative to the "low education and employment" group. In other words, treatment group youth are more highly concentrated in the profile characterized by success in the outcomes targeted by the PROMISE model. The positive association between RA to the treatment group and profiles with better employment outcomes is not surprising because the five-year impact analysis documented that, on average, the six PROMISE programs increased youth's employment in the year before the five-year survey, albeit with differences between the programs (Patnaik et al. 2022a). However, the five-year impact analysis found that, on average, PROMISE programs had no impact on youth's enrollment in postsecondary education.

In general, many of the differences by profile in the pooled sample hold across programs, though there are some exceptions (Appendix Tables A.4–A.9). For example, the shares of treatment group youth are higher among youth in the "high education and employment" and "employed and not in postsecondary school" profiles than the "low education and employment profile" in all sites except ASPIRE and MD PROMISE. Similarly, the shares of youth with intellectual and developmental disabilities are lower among youth in the "high education and employment" and "employed and not in postsecondary school" profiles than the "low education and employment profile" in all sites except WI PROMISE.

Families in the three profiles experienced different outcomes at the time of the five-year survey, beyond the outcomes we considered as states (Table III.2). Youth outcomes follow a pattern that might be expected given the change in five-year states as we move from the "low education and employment" profile to the other two profiles of youth who are "employed and not in postsecondary school" and those with "high education and employment": higher earnings, lower SSA payments, greater self-determination and higher shares living independently. For example, youth in the "high education and employment" profile have average total SSA payments that are about 25 percent lower than those in the "low education and employment" profile.

Table III.1. Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	43.9	46.0	57.2	0.00†††
Baseline youth and parent characteristics				
Youth sex is female	35.4	31.9	32.6	0.03††
Youth age at RA				0.00†††
14 years	40.2	37.0	31.7	
15 years	28.7	27.1	30.6	
16 years	31.1	35.9	37.7	
Youth race and ethnicity				0.00†††
Non-Hispanic White	20.5	18.8	22.5	
Non-Hispanic Black	32.8	40.4	42.6	
Hispanic	35.5	27.6	22.6	
Non-Hispanic American Indian, other, or mixed race	9.6	11.1	10.5	
Missing	1.5	2.1	1.8	
Youth primary impairment				0.00†††
Intellectual or developmental	51.2	41.3	38.9	
Speech, hearing, or visual impairment	1.7	1.6	2.0	
Physical disability	16.6	12.4	12.2	
Other mental impairment	25.5	41.1	42.6	
Other or unknown disability	4.9	3.5	4.3	
Youth age at most recent SSI application	6.6	7.3	7.5	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	10.6	16.2	6.9	
Any parent received OASDI only	8.7	15.7	7.7	
Any parent received both SSI and OASDI	4.9	10.3	4.7	
No parent received any SSA payments	67.7	51.2	75.3	
No parent was included in the SSA data analyses	8.1	6.6	5.4	
Youth had earnings in the calendar year before RA	1.6	2.1	5.2	0.00†††
Youth earnings in the calendar year before RA ($)	13	13	60	0.00†††
Parent had earnings in the calendar year before RA	66.1	46.1	78.7	0.00†††
Parent earnings in the calendar year before RA ($)	16,345	9,214	18,760	0.00†††
Number of youth	3,320	872	3,313	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Data on characteristics are derived from SSA administrative records, except for race and ethnicity, which is derived from the ASPIRE intake form for ASPIRE and from the 18-month survey for all other programs.

†/††/††† Differences across profiles are significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Table III.2. Outcomes of youth and parents at the time of the five-year survey, by profile

Outcome	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	2	9,366	8,142	0.00†††
SSA payments during Years 1 to 5 ($)	38,805	32,477	30,391	0.00†††
Self-determination score (mean; 0 to 100)	75.2	80.4	80.3	0.00†††
Youth living independently (%)	5.4	15.5	19.3	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	62.6	44.5	76.6	0.00†††
Parents' earnings in the past year ($)	20,212	12,551	27,358	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	16,558	28,979	12,756	0.00†††
Number of youth	3,320	872	3,313	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

RA = random assignment; SSA = Social Security Administration.

Parents' outcomes also differed across the three profiles but followed a different pattern than for youth. Unlike the pattern for youth, the parents of youth in the "low education and employment" profile did not have the lowest employment rates and earnings and highest SSA payments; rather, the parents of youth in the "employed and not in postsecondary school" profile did. This is consistent with the earlier finding that youth with the latter profile were more likely to have at least one parent receiving SSA payments at the time they enrolled in the evaluation, compared to youth with the other two profiles. A possible explanation of this pattern is that youth from the "employed and not in postsecondary school" profile experience family circumstances, such as having a parent that is unable to work and more reliant on SSA programs, which motivate them to prioritize employment over postsecondary education.

For every program, youth with the "low education and employment" profile had negligible earnings and higher SSA payments, as well as lower self-determination and lower likelihood of living independently at the time of the five-year survey, relative to youth who are "employed and not in postsecondary school" and those with "high education and employment" (Appendix Tables A.10–A.15). For every program, the parents of youth with the "employed and not in postsecondary school" profile had the lowest employment rates and earnings and highest SSA payments during the five years since RA.

D. Associations between the three profiles and use of PROMISE key services

To examine whether the use of PROMISE key services was related to youth pathways, we first examined differences in the use of transition services for youth across our three profiles. Then, we used a multinomial logit model to estimate differences in service use across youth in different profiles, while controlling for some youth characteristics (including those in which we detected significant differences between the treatment and control groups within the analytic sample).

Youth across the three profiles had different patterns of service use during the 18 months after RA, with youth in the two profiles with higher rates of education and employment generally having higher rates of service use and greater satisfaction with services (Table III.3). Larger shares of youth in the "high education and employment" profile used any transition services and used each of the four key youth transition services that PROMISE programs were required by the cooperative agreements to provide, compared with youth in the other two profiles. Their families were also more likely to have received family support services.

Table III.3. Youth and families' use of services during the 18 months after RA, by profile (percentage)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services	92.0	89.3	93.7	0.00†††
Received any key transition services	63.5	62.6	78.9	0.00†††
Case management	45.2	44.0	61.3	0.00†††
Employment-promoting services	45.5	51.5	69.0	0.00†††
Benefits counseling	9.2	12.6	18.1	0.00†††
Financial education	19.2	20.7	31.3	0.00†††
Any key service rated somewhat or very useful	96.0	97.0	97.4	0.05†
Received any family support services	34.7	36.5	43.6	0.00†††

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference across the profiles is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Similar patterns emerged when we estimated whether youth's use of the key services during the 18 months after RA predicted their profile membership (Table III.4). Youth who used benefits counseling or employment-promoting services were more likely to be members of the "high education and employment" or the "employed and not in postsecondary school" profiles, and less likely to be in the "low education and employment" profile. This pattern is not consistent for case management. Youth who use case management services, conditional on their other service use, were more likely to be in the "high

education and employment" profile but less likely to be in the "employed and not in postsecondary school" profile.

Table III.4. Adjusted relationship between youth's use of transition services across employment and education profiles

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.39††	1.34†††
Case management	1.00	0.78†††	1.28†††
Employment-promoting services	1.00	1.23††	2.09†††
Financial education	1.00	0.84	1.13†

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile, for the pooled sample of PROMISE youth. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Relative risk ratio is significantly different from one (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

E. Profiles of youth transitions by program

When examining each program separately, we found similar patterns of youth transitions across most programs. When observing pathways by program, the 10 most common pathways represented between 26 percent (WI PROMISE) and 38 percent (NYS PROMISE) of all observed pathways in each program (Appendix Table A.2). When comparing characteristics of youth in the three profiles across programs, we found some differences from the pooled findings (Appendix Tables A.4–A.9). In ASPIRE and MD PROMISE, the shares of treatment group youth are not higher in the "high education and employment" and "employed and not in postsecondary school" profiles than in the "low education and employment profile." Additionally, WI PROMISE is the only program for which the shares of youth with intellectual and developmental disabilities are lower in the "high education and employment" and "employed and not in postsecondary school" profiles than in the "low education and employment profile."

In comparing differences in youth and parent characteristics at the point of the five-year survey across the three profiles, the results for all programs are consistent with the pooled sample. For all programs, youth with the "low education and employment" profile had lower earnings and higher SSA payments, as well as lower self-determination scores and lower likelihoods of living independently at the time of the five-year survey, relative to youth with the other two profiles (Appendix Tables A.10–A.15). For every program, the parents of youth with the "employed and not in postsecondary school" profile had the lowest employment rates and earnings and highest SSA payments during the five years after RA.

We found some differences between the program-specific results and the pooled findings for the relationship between the use of services and the profiles to which youth belong (Appendix Tables A.16–A.27). There are differences in the use of any key transition service and employment-promoting services across the profiles for all programs. Likewise, across all programs, youth in the "high education and employment" profile are more likely to rank services to be somewhat or very useful. One consistent finding across all programs is that youth's use of employment-promoting services is strongly associated with their likelihood of belonging to the "high education and employment" profile. The use of financial

education appears to be the least predictive of profile membership in the pooled analysis and across programs (with the exception of WI PROMISE, where use of financial services is associated with a higher likelihood of youth being in the "high education and employment profile").

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IV. Mechanisms Behind the PROMISE Programs' Five-Year Impacts

The five-year evaluation found that the PROMISE programs, on average, improved some youth outcomes such as employment in the year before the five-year survey, though the impacts varied significantly across programs (Patnaik et al. 2022a). However, because the PROMISE intervention comprised a bundle of services, the average impacts of the programs provide little information about which individual services were particularly effective at influencing youth outcomes. To understand the mechanisms behind PROMISE's five-year impacts on some key youth outcomes, we examined the role played by the key services.

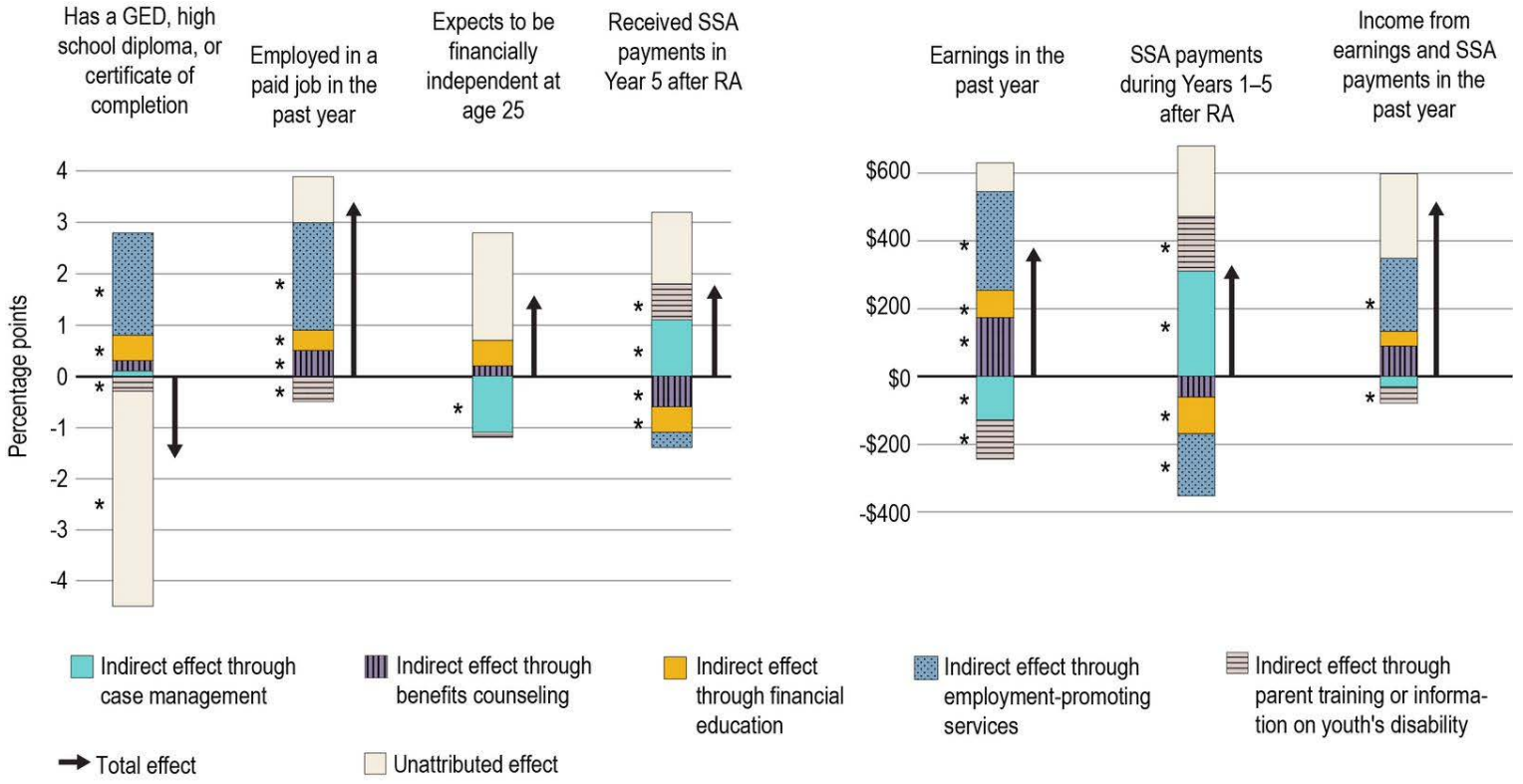
In the sections that follow, we present estimates of the indirect effects of PROMISE on each outcome—that is, the effects of PROMISE that operated through key services that had the potential to act as mediators (see text box). We also present estimates of the unattributed effects of PROMISE that operated through pathways other than these services. In addition, we discuss findings on youth's use of other non-key transition services and early employment experiences that can further explain the programs' impacts on youth's five-year outcomes.

A. The role of PROMISE key services in mediating the programs' average effects on five-year outcomes

The findings in this section document the link between PROMISE's impact on youth outcomes detected 18 months after RA and PROMISE's impacts on youth outcomes five years after RA. In Figure IV.1, we show how the six PROMISE programs, on average, affected the youth's five-year outcomes in terms of indirect effects through key services and unattributed effects. To provide context for the magnitude of indirect effects, we also show the total effect of the programs, on average. Estimates of these effects are also shown in Appendix Table A.1. Below, we describe the unattributed and indirect effects of PROMISE for each of the five-year outcomes examined.

Education. The total effect of PROMISE programs, on average, led to about a 2 percentage-point decrease in the share of youth that received a high school diploma, General Educational Development (GED), or certificate of completion at the time of the five-year survey. The indirect effects of PROMISE through employment-promoting services and financial education were positive—that is, the effect of PROMISE in increasing youth's use of these services is associated with a greater share of youth obtaining a high school completion credential. The average indirect effects of the PROMISE programs on high school completion through employment-promoting services and financial education were to increase this share by 2.0 and 0.5 percentage-points, respectively. The programs, on average, had a small negative indirect effect on secondary education through parent training and information on youth's disability, reducing the share of youth who obtained a high school completion credential by 0.3 percentage points. Thus, the programs' negative impact on youth's likelihood of obtaining a high-school diploma or equivalent credential largely cannot be explained by the key services.

Figure IV.1. PROMISE programs' indirect effects through key services and unattributed effects on youth five-year outcomes



Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This figure shows the decomposition of the total effects of PROMISE on seven outcomes into indirect and unattributed effects, based on regression-adjusted estimates of the six PROMISE programs (see details in Appendix A). We pooled data across the programs and weighted each program equally in order to estimate average effects. The indirect effect of PROMISE through a mediator is the effect of PROMISE on the outcome that operates through the mediator. The unattributed effect of PROMISE on an outcome is the effect that operates through channels other than the mediators examined. The total effect is the sum of the indirect and unattributed effects. We use weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. All outcomes are measured at the time of the five-year parent survey, unless otherwise specified. Monetary values are in 2020 dollars.

*/**/*** Indirect or unattributed effect is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

GED = General Educational Development; RA = random assignment; SSA = Social Security Administration.

Employment. The total effect of the PROMISE programs, on average, was to increase youth's employment rates in the year before the five-year survey by about 3 percentage points. Employment service use was an important mediator of the program's impact on this outcome; the indirect effect of PROMISE through this service increased employment rates by 2.1 percentage points, which is more than half the size of the total positive effect on this outcome. The programs, on average, had small positive indirect effects through benefits counseling and financial education, increasing youth's employment rates by 0.5 and 0.4 percentage points, respectively. They had a small negative indirect effect through parent training and information on youth's disability, reducing employment by 0.5 percentage points.

Earnings. The PROMISE programs, on average, had a total effect of increasing youth's earnings in the year before the five-year survey by $386. Employment-promoting services and benefits counseling stand out as important mechanisms contributing to this effect; the programs' average indirect effects through these two types of services were to increase earnings by $292 and $174, respectively. This finding is consistent with the expectation that receiving employment-promoting services during the transition period can help youth earn more in the longer term, whether that is through higher employment rates or better-paying jobs. It is also consistent with the expectation that benefits counseling can support higher earnings by helping youth understand how their earnings might or might not affect their disability benefits and work incentives, such as the student earned income exclusion. There is also a smaller but still positive indirect effect through financial education of increasing earnings by $80.

Case management and parent training and information on youth's disability were significant mediators of PROMISE's effects on youth earnings, but in an unexpected direction. The indirect effects of PROMISE through these two services appear to have decreased, rather than increased, youth earnings. The programs, on average, had negative indirect effects through case management and parent training and information on youth's disability of reducing earnings by $129 and $116, respectively. On the face of it, this finding is counterintuitive because PROMISE intended these services to improve youth's economic self-sufficiency. We discuss possible explanations for this finding in Chapter V.

Expectations of financial independence. The PROMISE programs, on average, had a total effect of increasing the share of youth that expected to be financially independent at age 25 by about 2 percentage points. PROMISE programs' positive average impact on this outcome is negatively associated with their impact on youth's use of case management during the 18 months after RA. The programs, on average, had a negative indirect effect through case management of reducing the likelihood of youth expecting financial independence by 1.1 percentage points. Thus, the programs' positive impact on youth's expectations of financial independence likely cannot be explained by the key services required by the cooperative agreements.

SSA payments. On average, the total effect of the programs was to increase the share of youth who received SSA payments in the fifth year after RA by about 2 percentage points. The programs' indirect effects through benefits counseling and financial education reduced the share of youth who received SSA payments in that year by about 0.5 percentage points each, consistent with the hypothesis that such services might help youth and their families manage their finances such that they have less need to participate in SSA programs. PROMISE's indirect effects through case management and parent training and information on youth's disability were negative, that is, they increased the share of youth who received SSA payments in the fifth year after RA, consistent with the findings described above about the indirect effects on earnings and expectations of financial independence.

The total effect of the programs was to increase youth's total SSA payments during the five years after RA by $326. The indirect effects of the programs through employment promoting services and financial education was to reduce payments by $184 and $108, respectively; this is consistent with the hypothesis that these services help youth become more self-sufficient and rely less on SSA payments during the five years after RA. However, again, there were large negative indirect effects through case management and parent training and information on youth's disability, increasing SSA payments to youth across the five years after RA by $311 and $162, respectively.

Income. On average, the PROMISE programs had a total effect of increasing youth income from earnings and SSA payments in the year before the five-year survey by about $520. Employment-promoting services emerged as an important mediator, with an indirect effect of increasing income by about $216. This is consistent with the findings described above about the mediating role that employment-promoting services likely played in the programs' impacts on earnings, which are key determinants of income. The programs, on average, had a negative indirect effect through parent training and information on youth's disability of reducing income by $49. More than half of the total effect of the PROMISE programs on youth income cannot be explained by the services examined in our analysis.

B. The role of other services and experiences in mediating the programs' average effects on five-year outcomes

In supplementary analyses, we examined several additional factors and their mediation effects on the five-year outcomes. In some cases, they are related to the key PROMISE services analyzed in the previous section but are derived from a different data source or represent a specific type of service within the broader categories of key PROMISE services. The five additional mediators are help with life skills, help learning about or getting into a school or training program, attendance at a job-related training program, and employment in a paid job during the 18 months after RA.

Looking across all the mediators, youth having had paid employment during the 18 months after RA stands out as a mediator of critical importance (Figure IV.2 and Appendix Table A.29). The programs' indirect effects through early work experiences are statistically significant for all the five-year outcomes that we examined; they are also substantial in size (larger than the unattributed effect and at least half the size of the total effect for all outcomes). Moreover, the direction of the indirect effects is consistent with the notion that early work experiences help youth achieve higher employment rates, earnings, and income, while nudging them away from reliance on SSA programs. Another mediator that stands out among non-key services is youth receiving help learning about or getting into a school or training program. The PROMISE programs, on average, had significant indirect effects through this service for all outcomes examined.

The examination of the additional mediators provides some insight on the role of the five key services as captured by the data used in this study. Consider, for example, the programs' average effect on youth employment in the year before the five-year survey. When we examined only the key services, the programs' indirect effect through employment-promoting services (2.1 percentage points) is nearly half of the total effect on these outcomes. But after controlling for other potential mediators, the indirect effect on employment through employment-promoting services is smaller (0.7 percentage points).

Although accounting for work experience seems to reduce the importance of employment-promoting services as a mediator, one should keep in mind that work experience and employment-promoting services can be closely connected. For some youth, employment-promoting services might have been the

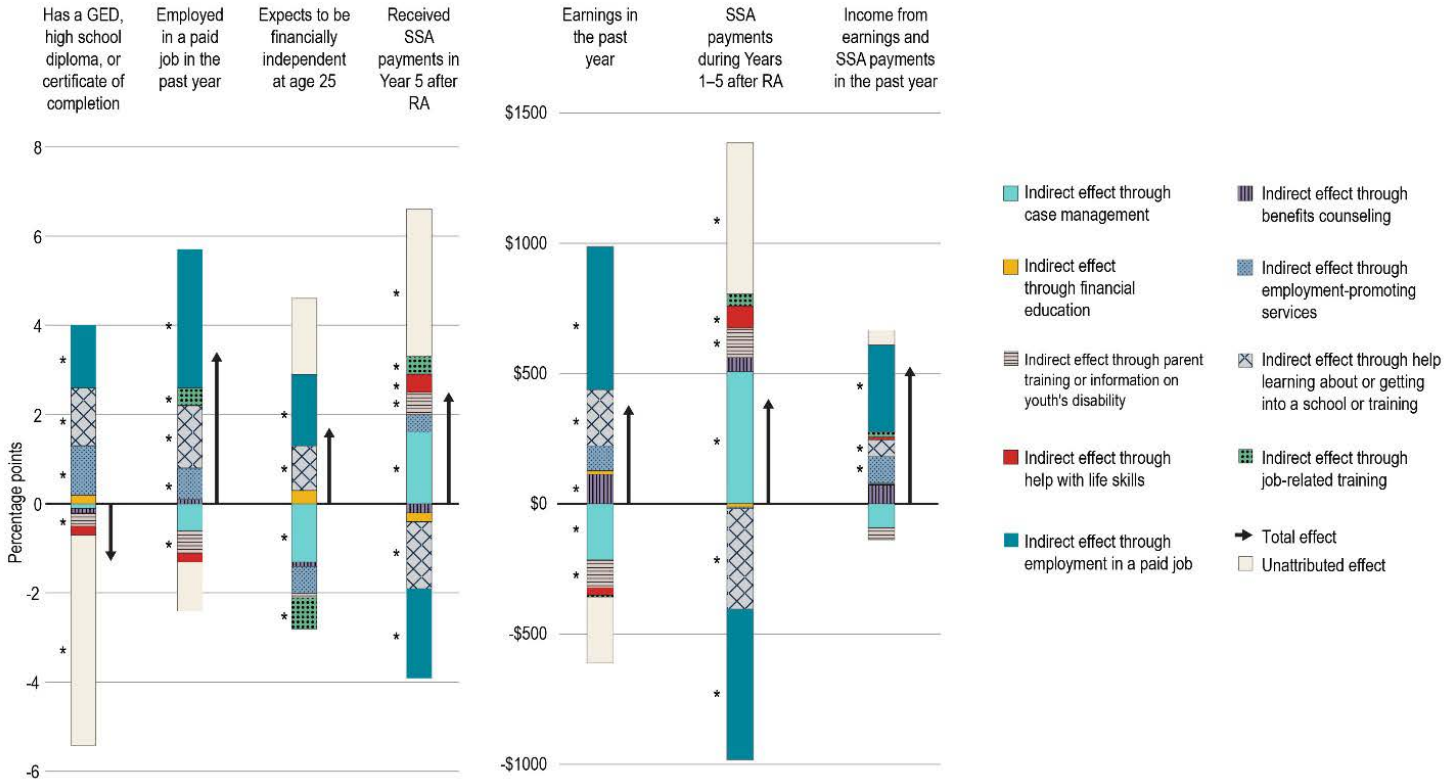
source of their connections to paid employment. Other youth might have independently pursued jobs but only because they received help learning about jobs that matched their interests or about looking for a job or requesting job accommodations. Indeed, among youth who were employed during the 18 months after RA, the majority (76 percent) had used employment-promoting services. However, among those who used employment-promoting services, a smaller share (39 percent) had paid employment during that period. One way to interpret the above finding is that, when we compare within groups of youth who have the same pattern of early employment experiences, then use of other employment-promoting services becomes less important as a mediator of the PROMISE programs' effects on youth employment. Thus, employment-promoting services can be important, but primarily because of their role in helping youth obtain paid work experience. Further, among youth who obtained employment independently, there is potential for employment-promoting services to help with job quality or career growth.

One consistent finding that remains regardless of the number of mediators examined is that, on average, the PROMISE programs' indirect effects through case management and parent training and information on youth's disability were not in the direction intended by the PROMISE model. That is, in general, the programs' indirect effects through these services was to reduce youth's economic self-sufficiency. Even when we include additional mediators beyond key services, the programs' indirect effects through either one or both of these services are to reduce the likelihood of youth's employment, earnings, expectations of financial independence, and income, while increasing participation in SSA programs and total SSA payments. Parent training and information on youth's disability consistently had a negative indirect effect for all but one outcome (youth's expectations of financial independence).

C. The role of services and work experiences in mediating each program's effects on five-year outcomes

To understand the link between each program's impacts on mediators and its ultimate five-years impacts, we decomposed the significant impacts of each PROMISE program by the key 18-month mediators (Appendix Tables A.30, A.31 and A.32). In the program-specific analyses, we found fewer services that were mediators of impacts, compared to the pooled analyses. We found no instance of a program-specific analysis pointing to a significant mediating effect that worked in the opposite direction of what we found in the pooled data analysis. For some outcomes, more than one program had an impact on the outcome, but we only identified key services as significant mediators for a subset of the programs. The findings from the program-specific analyses confirm the importance of early employment experiences. For the two programs with persistent impacts on youth's employment five years after RA (NYS PROMISE and WI PROMISE), having paid employment during the 18 months after RA and receiving help learning about or getting into a school or training were significant mediators of the programs' impacts on employment in the year before the five-year survey. We discuss the findings of the program-specific mediation analyses in greater detail in Section B.2 of the technical appendix.

Figure IV.2. PROMISE programs' indirect effects through services and work experiences and unattributed effects on youth five-year outcomes



Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This figure shows the decomposition of the total effects of PROMISE on seven outcomes into indirect and unattributed effects, based on regression-adjusted estimates of the six PROMISE programs (see details in Appendix A). We pooled data across the programs and weighted each program equally in order to estimate average effects. The indirect effect of PROMISE through a mediator is the effect of PROMISE on the outcome that operates through the mediator. The unattributed effect of PROMISE on an outcome is the effect that operates through channels other than the mediators examined. The total effect is the sum of the indirect and unattributed effects. We use weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. All outcomes are measured at the time of the five-year parent survey, unless otherwise specified. Monetary values are in 2020 dollars.

*/**/*** Indirect or unattributed effect is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

GED = General Educational Development; RA = random assignment; SSA = Social Security Administration.

V. Conclusions

A. Discussion of findings

Youth followed many different pathways from the 18-month to the five-year outcomes. About 1 in every 25 youth had the same combination of 18-month and five-year outcomes, representing substantial diversity in the life experiences of the youth. Despite the diversity, we were able to develop three broad profiles of youth based on their pathways. One profile ("high education and employment") presented a rosy picture of youth's five-year outcomes. A second profile ("low education and employment") presented a bleaker picture. Most youth (about 9 in 10) matched one of these two profiles. The third profile ("employed and not in postsecondary school") fell somewhere in the middle; many youth had completed high school and all had paid employment in the year before the five-year survey, but they were not enrolled in postsecondary school. Typically, youth with the "high education and employment" profile also had better 18-month outcomes. Compared with the average youth, larger shares of these youth had job training and paid employment and had parents who were employed, had received job training, and expected the youth to be financially independent at age 25. Youth with the "low education and employment" profile experienced largely the opposite during the first 18 months after RA. This is consistent with the notion that early work experiences, job training, and parents' high expectations can predict better transition outcomes (Carter et al. 2012; Mazzotti et al. 2015; Papay and Bambara 2014), although these same factors might also be more prevalent among youth who are particularly motivated.

Youth characteristics and outcomes differed across the profiles, usually in ways that were consistent with evidence from past research. For example, youth with the "low education and employment" profile were more likely to have intellectual or developmental disabilities and to be assigned to the control group relative to youth with the other two profiles. The associations are consistent with the finding of the five-year impact evaluation that the six programs had an average impact of increasing youth's employment and that the programs' impacts were sometimes more positive for older youth (Patnaik et al. 2022a). Youth with the "low education and employment" profile were also more likely to have an intellectual or developmental disability, consistent with the body of evidence that youth with these disabilities fare more poorly with respect to employment and education outcomes relative to youth with other disabilities (Newman et al. 2011a, 2011b; National Center for Education Statistics 2020). As might be expected, youth with this profile had lower earnings, higher SSA payments, and were less likely to live independently relative to youth with the other two profiles. Finally, youth assigned to the treatment group were least likely to have the "low education and employment" profile, which is consistent with the finding from the five-year impact evaluation that, on average, the PROMISE programs increased youth's employment rates and earnings, although the programs varied in their impacts (Patnaik et al. 2022a).

The PROMISE model was a bundled intervention, making it challenging to isolate the effects of different program components, but the findings presented here shed light on the likely mechanisms through which the programs' impacts operated (Table V.1). Across multiple analyses, employment services, as defined and conceptualized for the evaluation, stood out among the PROMISE key services for its potential to help explain the programs' impacts. Youth who used employment services were more likely to have the "high education and employment" or "employed and not in postsecondary school" profiles. The mediation analyses indicate that part of the PROMISE programs' average impacts on key five-year outcomes (employment, earnings, and income) operated through increasing the share of youth who used

Table V.1. Summary of indirect effects of the PROMISE programs through services and work experiences

Five-year outcome	Use of services and experiences during the 18 months following random assignment								
	Case management	Benefits counseling	Financial education	Employment-promoting services	Parent training or information on youth's disability	Help learning about or getting into a school or training	Help with life skills	Job-related training program	Employed in a paid job
Has a GED, high school diploma, or certificate of completion	0	0	0	+	-	+	0	0	+
Employed in a paid job in the past year	0	0	0	+	-	+	0	+	+
Earnings in the past year ($)	-	+	0	0	-	+	0	0	+
Youth expects to be financially independent at age 25	-	0	0	0	0	+	0	-	+
Received SSA payments in Year 5	+	0	0	0	+	-	+	+	-
SSA payments during Years 1–5 ($)	+	0	0	0	+	-	+	0	-
Income from earnings and SSA payments in the past year (S)	0	0	0	+	0	+	0	0	+

Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This table summarizes the indirect average effects based on regression-adjusted estimates of all PROMISE programs. The indirect effect of the PROMISE programs through a mediator is the effect on the outcome that operates through the mediator. See Appendix Table A.35.

+/- The average indirect effect through the mediator is positive/negative and statistically significant at the .10 level using a two-tailed t-test.

0 The average indirect effect through the mediator is not statistically different from zero at the .10 level using a two-tailed t-test.

GED = General Educational Development; SSA = Social Security Administration; VR=vocational rehabilitation.

employment services. Receipt of financial education and benefits counseling also were mediators of PROMISE's effects for some five-year outcomes. Taken together, the findings suggest that these three services worked largely as intended by the designers of PROMISE.

Case management and parent training and information on the youth's disability were key services that did not seem to work as indicated in the PROMISE logic model. Each PROMISE program increased the share of youth who used case management and the share of families where a member received training and information on the youth's disability; however, on average, the programs' indirect effects through these services did not work as the funders of PROMISE intended (that is, they reduced youth earnings and increased SSA payments). On the face of it, this finding is counterintuitive because, according to the logic model, these services were expected to improve youth self-sufficiency. Case management was intended to include transition planning and helping participants to navigate the broader service delivery system, which was expected to improve key youth outcomes. Similarly, programs were required to provide parents with training and information on how to support and advocate for their youth so that they may achieve their education and employment goals. Such services were expected to improve youth outcomes because prior research has found that transition outcomes are improved when family members actively support youth's work experiences, including by providing important perspective about interests and preferences (Test et al. 2009).

We posit three possible explanations for the negative indirect effects through case management and parent training and information on youth's disability on youth's transition outcomes. First, although programs were required to offer all key services, the youth and their families selected which services to use. Youth who used case management and parents who received training and information on youth's disability might disproportionately have been youth with greater support needs and those at risk for poor outcomes regardless of the intervention. We found some evidence to suggest that youth who used these two types of services had greater healthcare needs, on average, compared to youth who did not.[3] In that case, PROMISE might have increased use of these services among families who needed them, but the increase would be negatively associated with youth's employment and earnings.

Second, these services could have equipped families with the knowledge and supports to choose a transition path that was right for their youth but which was not necessarily aligned with the goals of PROMISE. As youth and parents learned more about the youth's disability and how to get the services or supports they need, they might have updated their goals, expectations, and understanding of the options available for the youth. For some youth, paid employment might not have been a feasible or desirable outcome at that stage of their transition to adulthood and their families might have decided to focus on pursuing supports and services to protect the youth's well-being rather than focusing on economic independence as a goal. In such cases, PROMISE's impact of increasing families' use of these services would be negatively associated with youth's economic self-sufficiency outcomes. Nonetheless, the services might have benefited the families who used them in ways that we did not measure. In other

[3] In supplementary analyses (not shown), we found significant differences in Medicaid expenditures between youth who used these two services and those who did not. The average Medicaid expenditures in the year before RA were $1,472 among youth who used case management and $1,244 among youth who did not. Youth who used case management were also more likely to have Medicaid inpatient or prescription expenditures in the year before RA. The average Medicaid expenditures in the year before RA were $1,519 among youth whose parents received training and information on the youth's disability and $1,286 among youth whose parents did not. Youth who used case management were also more likely to have Medicaid long-term care or prescription expenditures in the year before RA.

words, the programs' impact on these two services might have mediated positive impacts on other measures of youth and family well-being that we did not examine in this study.

Finally, there might be error in the service use measures. For example, use of case management was based on parents' responses to the following survey question: "Since RA, has [YOUTH] worked with anyone to determine [his/her] needs and help connect [him/her] to services and supports related to education, employment, health, housing, or anything else?" Parents of youth with specific or unusual needs or goals that required a careful needs assessment and more tailored service connections might have been more likely to respond yes to the question relative to parents of other youth. Similarly, we measured use of parent training and information on youth's disability based on parents' responses to the following survey question: "Since RA, have you or another family member had help learning about [YOUTH]'s disability and how to get the services or supports [he/she] needs or had training on how to support [YOUTH]'s independence?" Parents of youth with greater support needs or parents who started out with lower levels of information and training might have been more likely to respond yes to the question, compared to parents of other youth. Thus, potential measurement error might explain the seemingly counterintuitive finding.

Early employment experiences and receiving help learning about getting into school or training also played roles in the programs' impacts. The indirect effects of the PROMISE programs through these two services consistently increased education, employment, earnings, and income and reduced reliance on SSA benefits. This is consistent with findings from prior studies that early work experience predicts employment in adulthood for young people with disabilities (Fabian 2007; Carter et al. 2012; Simonson and Neubert 2012; Mazzoti et al. 2015, 2021; Fraker et al. 2018) and also predicts better job quality for youth from disadvantaged backgrounds (Ross et al. 2018). A prior study also found that work experience was a key mechanism that could explain the impact on youth earnings for Job Corps, which was a program to provide low-skilled and less-educated young people (ages 16–24) with marketable skills (Flores and Flores-Lagunes 2009). Accounting for services not classified as "key" services and early work experience reduced the role of employment-promoting services (as defined for the evaluation) as a mediator of PROMISE's impacts. Thus, the measures likely overlap significantly. One possible explanation is that, once a transition program is able to connect youth to work experiences and help getting into school or training, then providing additional employment-promoting services might offer diminishing returns in terms of improving their outcomes. However, we do not have sufficiently detailed data on the types, intensity, or quality of employment-promoting services to investigate this hypothesis.

The findings from the mediation analyses are consistent with the differences in the ways the programs' implemented the key services. As described in the programs' process analysis reports, each program had different challenges and experiences while implementing PROMISE, some of which were unique to their service environment (Anderson et al. 2018; Honeycutt et al. 2018b; Kauff et al. 2018; Matulewicz et al. 2018; McCutcheon et al. 2018; Selekman et al. 2018). As a result, the programs differed in their emphases on the key services, and the effectiveness of those services might also have differed. For example, when we examined the role of key services in mediating WI PROMISE's impact on youth employment rates in the year before the five-year survey, we identified financial education as a significant mediator. However, financial education was not identified as a significant mediator of NYS PROMISE's impact on this outcome. This is consistent with findings from the 18-month impact analyses, which found that the programs varied in the size of their impacts on youth's use of financial education. While WI PROMISE increased the likelihood of youth using financial education services during the 18 months after RA by 100 percent (from the control group mean of 15 percent to 30 percent), NYS PROMISE increased

it by 40 percent (from the control group mean of 17 percent to 21 percent). The early impacts on service use can help explain why, while both programs had an impact on youth's employment in the year before the five-year survey, financial education was a significant mediator for only WI PROMISE.

Finally, the unattributed effects of the programs on youth outcomes—that is, those that operated through channels other than the mediators we examined—were substantial. In other words, the family-reported data on use of services and work experiences could explain only part of the programs' impacts on youth's five-year outcomes. It might be that other unmeasured factors contributed to the programs' impacts, such as services that the programs provided but we did not examine (for example, help with social skills and health literacy). However, it might also be the case that limitations of the data and methods (discussed further in the next section) prevent us from being able to pinpoint all underlying mechanisms of the programs' impacts.

B. Limitations

The data used for this study have some limitations. We examined binary measures of whether the youth used a type of service without accounting for service intensity. We did not have data on the timing, settings, or quality of services nor on the training and expertise of the service providers. The measures of service use also do not distinguish between subtypes of a service or the six programs' different implementations of services. The measures of service use rely on survey data from parents and are vulnerable to measurement error and recall error. The data capture service use only during the first 18 months after RA and do not account for services used between 18 months and the five-year follow-up, when many PROMISE programs worked to re-engage participants (Crane et al. 2019), nor do they capture service use before RA. Therefore the findings can only shed light on the role of services during the 18 months after RA, as measured for this evaluation.

The cluster analysis methodology that we used to derive profiles has two limitations. First, we selected the optimal number of profiles using goodness-of-fit-statistics but also through subjective decisions based on our understanding of the goals of PROMISE and the desire to select profiles that were sufficiently distinct from one another. Second, the variation in pathways and the final number of profiles are partially a function of the number of states we defined at the outset. Focusing on different states would have changed the number of possible pathways and the combinations of outcomes used to define the profiles.[4]

There are two caveats to the methods used in the mediation analysis. First, although families' eligibility for PROMISE services was determined by RA, treatment group enrollees could select into different services based on their own needs or goals, which might be correlated with their outcomes. In other words, there may be unmeasured pre-RA characteristics that influence the likelihood of using certain services and independently affect youth outcomes. Second, the analyses do not account for the impacts of PROMISE on other determinants of youth outcomes that we did not measure or analyze. PROMISE might have generated changes in unmeasured post-RA factors, such as youth's self-advocacy skills, that influenced youth's outcomes as well as their use of services and experiences. In this example, because our model does not control for self-advocacy skills, we cannot be certain that that the impacts of PROMISE

[4] In supplemental analyses (not shown), we used two alternative lists of input states with greater numbers of states. The general findings did not change substantially. The pathways were similarly diverse (albeit with a larger number of pathways because there were more possible combinations), and the cluster analysis tended to converge to three profiles presented in this report.

on measured mediators caused the observed improvements in outcomes. Hence, the estimated indirect effects should be interpreted as associations and correlations rather than causal effects.

C. Implications for policy and practice

Keeping the above limitations in mind, the findings of the pathways and mediation analyses suggest some implications for transition policy and practice.

1. The diversity of youth's transition pathways suggests that diversified and customized service models are likely needed to effectively support youth transition.

Existing templates for transitions to adulthood are sometimes dominated by a false dichotomy of optimal or problematic transitions (Schoon and Lyons-Amos 2016), characterized by progress or lack thereof along a linear career path from full-time education to full-time employment (Birdwell et al. 2011). However, PROMISE youth followed diverse pathways over the five years after RA. Some were less likely to participate in extended education and instead try to forge a career through a work-focused route after high school, potentially because family circumstances made continued education unaffordable, or they had different interests or aspirations. This pathway can be labeled as neither optimal nor problematic; foregoing postsecondary education might or might not reduce lifetime earnings, but at the five-year follow-up, youth with this profile were earning at least as much as those with the "high education and employment" profile. Recognizing this diversity of youth's goals and circumstances, PROMISE programs did not take a one-size-fits-all approach to services. The findings presented in this report suggest the need to consider more diversified and customized service models, taking into account the needs and experiences of different subgroups of youth with disabilities.

In practice, transition programs could tailor service packages for youth, based on the youth's goals, constraints, and other factors associated with transition outcomes, including parents' characteristics and family circumstances. Program staff could work with youth and their families to collaboratively identify specific services from among an array of services offered or a customized intensity of services. For example, when youth enrolled in CaPROMISE, case managers collected information about the youth's education and work experience, functional capacity, and transportation needs and family members' concerns, priorities, and resources (Matulewicz et al. 2018). They then worked with youth to develop a "person-driven plan" that documented the youth's long-term goals and an "individual career action plan" that focused on short-term, measurable objectives. For each objective, the youth and case manager worked together to develop a plan and identify necessary services, supports or accommodations, and specify starting and expected completion dates. The plans were regularly updated; as services progressed and goals were achieved, new objectives were added. Transition programs could similarly collect information to better understand and respond to the needs and constraints of individual youth and their families, and collaborate with them to identify appropriate services.

If tailoring services is infeasible due to resource constraints, programs could consider designing service packages based on youth profiles. This involves identifying profiles or groupings of youth differentiated by goals or support needs and designing a service package for each profile. A systematic review of youth employment interventions found that programs that used profiling were more likely to succeed and have larger effects (Kluve et al. 2016). However, this approach entails risks such as incorrectly assigning youth to profiles and biased profiling of subgroups of youth. The findings from PROMISE suggest programs should, when possible, pursue greater customization and collaboration with youth and their families when

developing service plans, recognizing that youth and their families need not all share the same goals or experiences during the transition to adulthood.

2. There is strong evidence that early work experiences are linked to better outcomes for youth with disabilities; research and practice must develop means to foster these experiences in an effective and scalable manner.

The findings from this study consistently showed that youth's early work experiences were associated with better economic outcomes and were an important mechanism for the PROMISE programs' impacts on youth's five-year outcomes. Employment-promoting services were often an important mediator of the programs' effects, but the mediator that was consistently important for all of the five-year outcomes examined was youth's paid employment during the 18 months after RA. This suggests that employment-promoting services—especially those that help youth obtain early paid work experiences—can help get youth on a path to longer-term employment and economic well-being. The finding is consistent with the fact that each of the PROMISE components had some evidence of effectiveness, but career and work-based learning experiences had stronger evidence of effectiveness (Honeycutt et al. 2018a; Luecking et al. 2018; Fraker et al. 2018; Sevak et al. 2021).

Work experience need not necessarily involve competitive employment to support youth's transition to adulthood. Many PROMISE programs provided sponsored or subsidized jobs or connections to unpaid work experiences. For example, WI PROMISE often connected youth to trial work experiences that typically lasted 90 days and paid participants wages subsidized by the program (Selekman et al. 2020). Among youth who had a paid work experience during the first three years of program operations, only one-third had worked in a competitive job (Selekman et al. 2020). Whether or not it is competitive, a work experience can potentially help youth learn about their interests and abilities, shadow and be mentored by more experienced workers, build industry knowledge and networks, and develop valuable social and work-related skills.

The evidence strongly suggests that transition programs that aim to promote economic self-sufficiency must include work experience as a component. Recent federal efforts show an increasing recognition of the importance of providing work experiences to youth in transition. For example, the Workforce Innovation and Opportunity Act of 2014 prioritizes and earmarks funding for services that facilitate such work experiences for youth. But questions remain about how best to provide these services, because not all services that provide work experiences can guarantee long-term impacts. Although all PROMISE programs succeeded in connecting more youth to early work experiences, only some programs increased youth's employment at the five-year follow-up (Mamun et al. 2019; Patnaik et al. 2022a). Moreover, the programs that had the largest impacts on early work experiences did not have the largest impacts on longer-term employment. The transition field needs more research and development to build a better understanding of how best to provide early work experiences for youth with disabilities, the key features of work experiences that result in better outcomes, how to involve other stakeholders (such as employers and families) in designing these experiences, and how to scale their delivery.

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Technical Appendix

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In this appendix, we provide more detail on the methods used in this study as well as detailed results from the analyses.

A. Methods

1. Profiling youth's transitions to adulthood

To characterize youth's pathways to employment and education, we used sequence and cluster analyses. First, we used sequence analysis to summarize and categorize longitudinal patterns of outcomes for youth over the five years since enrollment in PROMISE, which we call pathways. Next, we used cluster analysis to group youth pathways into typical archetypes, which we call profiles. Then, we used statistical testing to describe differences in the composition of individuals associated with the profiles, including differences in treatment and control group membership, the programs they attended, and demographic characteristics. Finally, we used multinomial modeling to assess whether there were any associations between youth's uptake of transition services offered by PROMISE and patterns of employment and education over time.

Sequence analysis is a statistical technique that identifies patterns in the ordering and timing of complex longitudinal processes. We used sequence analysis to order, summarize, and describe the possible pathways that youth follow. We started by defining sequence states (Table III.1 of the report) using the TraMineR package in R (Gabadinho et al. 2009). We then ran correlation and transition matrices to ensure that there were no states that were either highly correlated (r=~0.8) or in which transitions were rare (~0.10); these situations would cause analytical problems in clustering. We used the plotting sequence in TraMineR to visually inspect the distribution of all pathways and to display the top 10 pathways shown in Figures III.2─III.5 in the main text (Gabadinho et al. 2011).

We used cluster analysis to build the youth profiles. Cluster analysis is an algorithmic method of grouping observations based on similar characteristics through an iterative sorting process. The cluster algorithm assigned each youth to the profile that most closely reflected (but might not exactly match) their own pathway. Youth could only be assigned to one profile. To ensure that the data were suitable for clustering, we examined the Hopkins statistic. The Hopkins statistic compares nearest-neighbor distances in the data with nearest-neighbor distance in data simulated from a multivariate normal distribution. The statistic takes a value of from zero to one; values more than 0.5 are considered to indicate high levels of clustering in the data (Banerjee and Dave 2004). The Hopkins statistic was 0.98, which represents high levels of clustering in the data, meaning the data is well-suited for cluster analysis. We also tested three different clustering algorithms: k-modes, hierarchical clustering using Ward D2 clustering, and hierarchical clustering using complete linkage. K-modes clustering is a method of k-means clustering that is adapted to binary data, which we used since the states in our data are all binary states (Huang 1998; Huang and Ng 1999; Makarenkov and Legendre 2001). Likewise, we calculated a distance matrix using Jaccard distance rather than Euclidean distance to account for the binary nature of the data (Ivchenko and Honov 1998).

To select the optimal clustering algorithm and the optimal number of profiles, we relied on a series of goodness-of-fit-statistics using the NbClust package in R (Charrad et al. 2014), a series of graphical interpretations, and our knowledge of the goals of PROMISE. After testing a number of clustering algorithms, we used k-modes to define the clusters. We did so for two reasons. First, the average silhouette widths for the k-modes methods were higher than the other algorithms (Kodinariya 2014).

Second, we inspected the distribution of states within each cluster for each algorithm and found that the k-modes algorithm created clusters wherein youth had distinctly different patterns of states (for example, creating clusters in which 100 percent of youth had employment experience in one cluster and 0 percent of youth had employment experience in another cluster). To determine the optimal number of clusters, we used graphical techniques, including elbow plots and silhouette plots, a dendrogram plot for the hierarchical clustering algorithm, and the Calinski Harabasz statistics derived from the NbClust output (Fowlkes and Mallows 1983; Halkidi et al. 2001; Maulik and Bandyopadhyay 2002). Upon consideration of these outputs, we selected an optimal number of three final clusters to represent the profiles of youth.

After determining the three profiles, we compared youth characteristics as well as parent and youth outcomes across youth in the three profiles. We conducted these comparisons using *t*-tests for binary measures and chi-squared tests for categorical measures. We weighted the measures to account for survey nonresponse and, in the case of CaPROMISE, survey sampling.

To assess the extent to which youth's use of different types of transition services predicted membership to a profile, we estimate a multinomial logit model of the following form for each youth *i*:

$$Profile_i = \alpha_i + \beta_1 EmpServ18_i + \beta_2 BenefitCouns18_i + \beta_3 CaseManage18_i + \beta_4 FinEd18_i + X_i'\omega_i + \varepsilon_i$$

Where $Profile_i$ is the profile that youth has been assigned to, *EmpServ18* indicates whether the youth had received employment-support services in the 18 months since RA, *BenefitCouns18* indicates whether youth had received benefits counseling in the 18 month since RA, *CaseManage18* indicates whether youth had received case management in the 18 months since RA, and *FinEd18* indicates whether youth had received any financial education services in the 18 months since RA. We included a matrix of relevant covariates in all regressions (X_i'), comprised of youth age (categories; age 16 is the omitted category); whether youth is female; youth race and ethnicity (categories; non-Hispanic White is the omitted category); youth primary impairment (categories; physical disability is the omitted category); youth duration of SSI payments at RA; youth total disability payment amount in the 12 months before the RA month; whether the youth's household has multiple children eligible for SSI; and parent SSA payment status at RA (categories; no parent received SSA payments is the omitted category). Some program-specific models had additional covariates to account for baseline imbalance within the program on additional covariates, such as youth's living arrangement in NYS PROMISE. The model for ASPIRE also included covariates for the geographic regions that ASPIRE comprised. The reference category is the "low education and employment" profile. The relative risk ratios presented in the results are derived by exponentiating the coefficients of interest, $\beta_1 - \beta_4$, and indicate the probability of a youth belonging to one profile relative to the reference profile.

2. Examining the mechanisms behind the PROMISE programs' five-year impacts

We examined the mechanisms behind the PROMISE programs' effects on 10 five-year outcomes. All 10 outcomes were primary outcomes for the five-year impact analysis and the average impact of the six programs on each of these outcomes was statistically significant (Patnaik et al. 2022a). Notably, because of differences in the analysis sample of this study and the five-year impact analysis as well as differences in methodology, the average impact estimates from the five-year impact analysis might differ from the total effects (that is, the sum of the indirect and unattributed effects) estimated in this study. Appendix Table A.1 defines the 10 outcomes and shows, for each outcome, the average impact estimated in the five-year impact analysis and the total effect estimated in this study.

Table A.1. Summary of impacts and total effects on youth five-year outcomes, by program (values in percentages and measured at the time of the five-year survey, unless otherwise noted)

Program and outcome	Impact[a]	*p*-value	Total effect[b]	*p*-value
All PROMISE programs				
Has a GED, high school diploma, or certificate of completion	-2.0**	0.029	-1.6	0.112
Employed in a paid job in the past year	2.9***	0.005	3.4***	0.002
Earnings in the past year ($)	301	0.100	386*	0.057
Youth expects to be financially independent at age 25	2.6**	0.039	1.6	0.238
Received SSA payments in Year 5	1.6**	0.045	1.8*	0.065
SSA payments during Years 1 to 5 ($)	401*	0.076	326	0.233
Income from earnings and SSA payments in the past year ($)	373**	0.031	520***	0.006
Arkansas PROMISE				
Covered by health insurance	-5.5**	0.012	-6.1***	0.009
ASPIRE				
Has a GED, high school diploma, or certificate of completion	-4.0*	0.070	-4.2*	0.083
CaPROMISE				
Income from earnings and SSA payments in the past year ($)	701*	0.090	984**	0.034
MD PROMISE				
Received SSA payments in Year 5	7.2***	0.001	7.8***	0.001
SSA payments in Year 5 ($)	330*	0.090	331	0.138
SSA payments during Years 1 to 5 ($)	1,598***	0.006	1,652**	0.011
Income from earnings and SSA payments in the past year ($)	633	0.185	634	0.234
NYS PROMISE				
Enrolled in an educational or training program	-4.7**	0.040	-5.0**	0.042
Employed in a paid job in the past year	4.3*	0.064	6.6**	0.010
Youth expects to be financially independent at age 25	5.5*	0.071	5.2	0.104
WI PROMISE				
Employed in a paid job in the past year	6.8***	0.007	7.8***	0.005
Income from earnings and SSA payments in the past year ($)	879**	0.043	1,211**	0.010

Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This table shows the regression-adjusted estimates of programs' impacts and total effects for outcomes on which programs had a statistically significant impact as found in the five-year impact analysis (Patnaik et al. 2022a). We pooled data across the programs and weighted each program equally in order to estimate average effects or impacts. All outcomes are measured at the time of the five-year youth survey, unless otherwise specified. For regressions using survey data, we weighted the statistics to adjust for survey nonresponse, and in the case of CaPROMISE, survey sampling.

*/**/*** The estimate is statistically significant at the .10/.05/.01 level using a two-tailed *t*-test.

[a] Estimated impact of program on outcome, as reported in Patnaik et al. 2022a. It is derived by comparing treatment and control group youth's average outcomes and controlling for characteristics through multivariate regression adjustment.

[b] Sum of the program's indirect effects through mediators and unattributed effects on the outcome. It is derived from a system of multiple equations by (i) comparing treatment and control group youth's average outcomes and controlling for baseline characteristics and mediators, and (ii) comparing treatment and control group youth's average mediators and controlling for baseline characteristics. All equations are estimated using multivariate regression adjustment.
ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California

PROMISE; GED = General Educational Development; MD = Maryland; NYS = New York State; SSA = Social Security Administration; WI = Wisconsin.

We used a decomposition mediation approach to understand the sources of PROMISE impacts on youth's five-year outcomes in terms of the programs' impacts on 18-month mediators (Heckman et al. 2013; Heckman and Pinto 2015; Kautz and Zanoni 2015). The main goal of this approach is to understand how the average impacts of an intervention can be separated into the intervention's indirect effects through some mediators that lay in the pathway between the treatment and the outcome and unattributed effects, as described below:

- The indirect effect of an intervention through a mediator measures the effect of the intervention that operates through the mediator. It is the expected difference in the outcome if each individual were exposed to the intervention and then were subsequently exposed to the level of the mediator they experience as a result of being in the treatment group (rather than the level of mediator they would have experienced in the absence of the intervention).
- The unattributed effect is the effect of the intervention that operates through all pathways other than the mediators being examined. It is the average difference in an outcome if each individual were exposed, rather than unexposed, to the intervention and then were subsequently exposed to the level of the mediator they would have experienced in the absence of the intervention.

Identifying these two effects depends on some assumptions (Celli 2022), which we list below:

1. No confounders must be present in the relationship between the treatment and the outcome.

2. No confounders must be present in the relationship between the treatment and the mediator.

3. No confounders must be present in the relationship between the mediator and the outcome.

4. Each mediator must be measured accurately.

In this study, assumptions 1 and 2 are satisfied due to the use of random assignment of youth to either a treatment or control group. The third assumption is a strong one that random assignment alone cannot guarantee will be satisfied. For example, all of the programs except MD PROMISE offered some services to promote youth self-advocacy (Honeycutt et al. 2018). Although these services might have improved youth's self-advocacy skills, we did not measure use of these services nor youth's self-advocacy skills. Greater self-advocacy might be independently related to both work experience during the 18 months after RA and also increased earnings in the year before the five-year survey. If PROMISE generated changes in unmeasured self-advocacy skills that confound the relationship between work experience and five-year earning, then the estimated indirect effect of PROMISE through work experience on earnings cannot be interpreted as causal. Although we cannot directly test this third assumption, satisfying it is more plausible if the mediator occurs shortly after the treatment (VanderWeele and Vansteelandt 2009), and in this study the mediators are measured during the 18 months after RA.

The fourth and final assumption is that there is no error in the measurement of each mediator (Heckman and Pinto 2015). Because the third and fourth assumption are strong assumptions that we cannot directly test using the available data, we discuss the estimated indirect and unattributed effects in terms of associations and correlations that do not claim a causal relationship.

We followed a two-step approach in our estimation. In the first step, we estimated the average impact of the PROMISE programs on each mediator. In the second step, we estimated the effect of PROMISE on selected five-year outcomes while adding the mediators as covariates.

Consider a simplified example with one outcome and two mediators and an analysis of data pooled across the programs. The outcome is an indicator equal to one if the youth had a paid job in the year before the five-year survey ($PaidJob_i$), one mediator is an indicator equal to one if the youth used benefits counseling during the 18 months after RA ($BenefitCouns18_i$), and the other mediator is an indicator equal to one if the youth used VR services during the 18 months after RA ($ReceivedVR18_i$). We included a matrix of relevant covariates in all regression models (X_i').

In the first step, we estimated two coefficients of interest: the average impact of the PROMISE programs on youth's use of benefits counseling during the 18 months after RA (β_{11}) and the impact of PROMISE programs on youth's use of VR services during the 18 months after RA (β_{12}):

$$BenefitCouns18_i = \alpha_{11} + \beta_{11}Treatment_i + X_i'\omega_{11} + \varepsilon_i$$

$$ReceivedVR18_i = \alpha_{12} + \beta_{12}Treatment_i + X_i'\omega_{12} + \varepsilon_i$$

In the second step, we estimated the average impact of the PROMISE programs on youth's likelihood of having a paid job in the year before the five-year survey, adding the two mediators as covariates:

$$PaidJob_i = \alpha_2 + \beta_2 Treatment_i + \gamma_2 BenefitCouns18_i + \lambda_2 ReceivedVR18_i + X_i'\omega_2 + \epsilon_{i.}$$

Here, β_2 represents the unattributed effect of PROMISE on $PaidJob_i$. The indirect effect of PROMISE on $PaidJob_i$ through $BenefitCouns18_i$ is equal to β_{11}*γ_2. The total effect of PROMISE on $PaidJob_i$ is given by $\beta_2 + \beta_{11} \times \gamma_2 + \beta_{12} \times \lambda_2$. The indirect effect estimates the association of PROMISE's early impacts on benefits counseling during the first 18 months after enrollment on the effect of PROMISE on having a paid job in the year before the five-year survey.

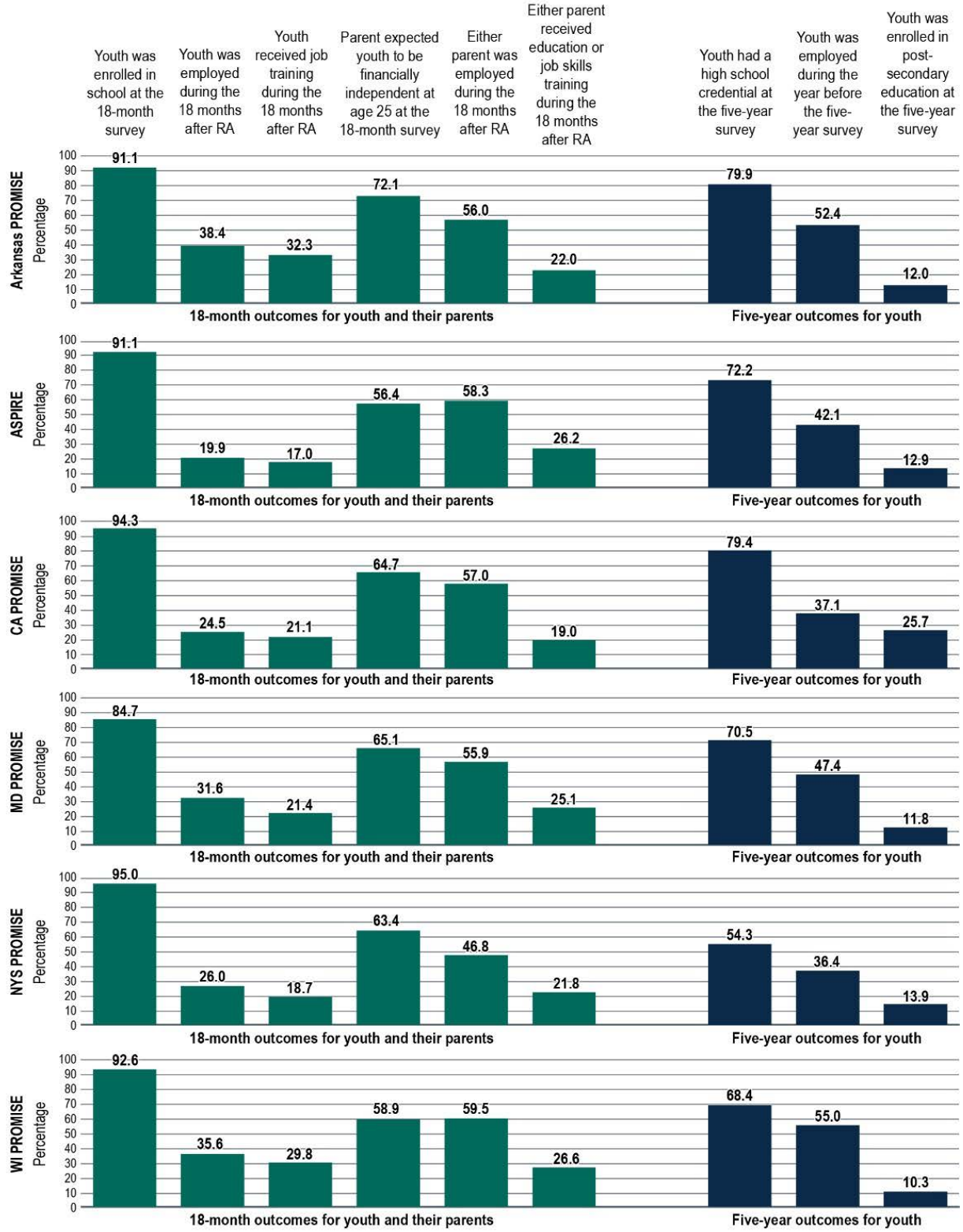
We estimated robust standard errors in each regression and then used the delta method to calculate the standard errors of the estimated effects (Mackinnon et al. 2004). The delta method accounts for the covariance structure across the mediators; it is a flexible estimator that we also apply to calculate the standard errors of mediators and outcomes that were multiply imputed.

B. Results

1. Profiling youth's transitions to adulthood

In Appendix Figures A.1–A.7 and Tables A.2–A.27, we provide program-specific detailed results that are the corollaries of findings presented in the report Figures III.1–6 and Tables III.1–4. Appendix Figure A.1 shows the share of PROMISE youth in each state used in the analysis by program. Appendix Figures A.2–A.7 show the 10 most common pathways for youth by program. Appendix Figures A.8 and A.9 show the 10 most common pathways for youth by age at RA. Appendix Table A.2 provides details on the number of total and unique pathways for each program, and Appendix Table A.3 provides detail on the distribution of youth by state for each profile. Appendix Tables A.4–A.9 report the baseline characteristics by the youth profile for each program. Appendix Tables A.10–A.15 report the program-specific differences in parent and youth five-year outcomes across the three profiles. Appendix Tables A.16–A.27 show the program-specific results for the relationship between the use of services and the profiles to which youth belong.

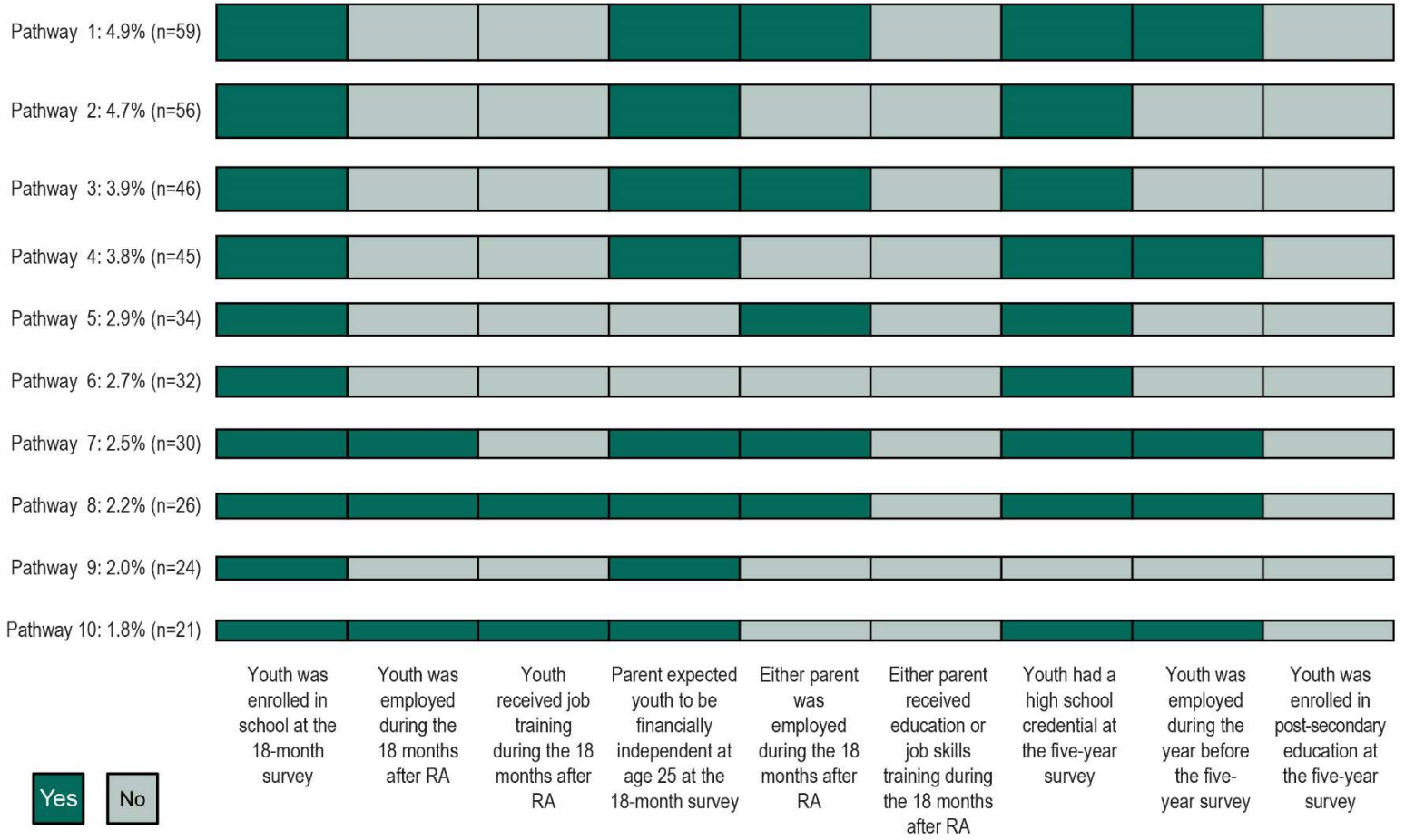
Figure A.1. PROMISE youth in states at 18 months and five years after RA, by program



Note: The figure shows the unweighted shares of youth who attained each state at the 18-month and five-year follow-ups. The analytic sample includes youth who completed both the 18-month and five-year follow-up surveys and whose parents completed the 18-month survey.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California PROMISE; GED = General Educational Development; MD = Maryland; NYS = New York State; RA = random assignment; WI = Wisconsin.

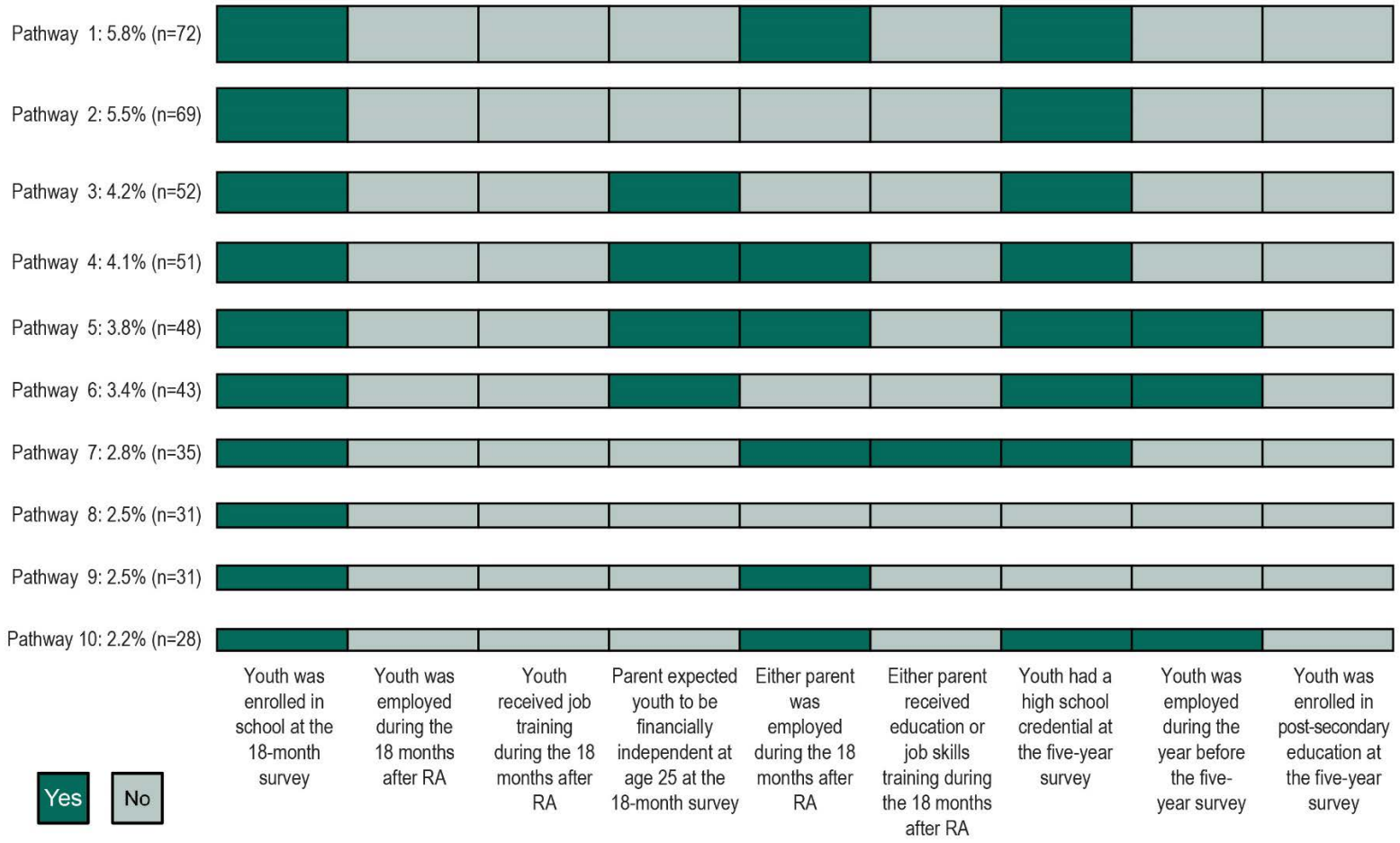
Figure A.2. Arkansas PROMISE: Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for Arkansas PROMISE youth enrollees. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

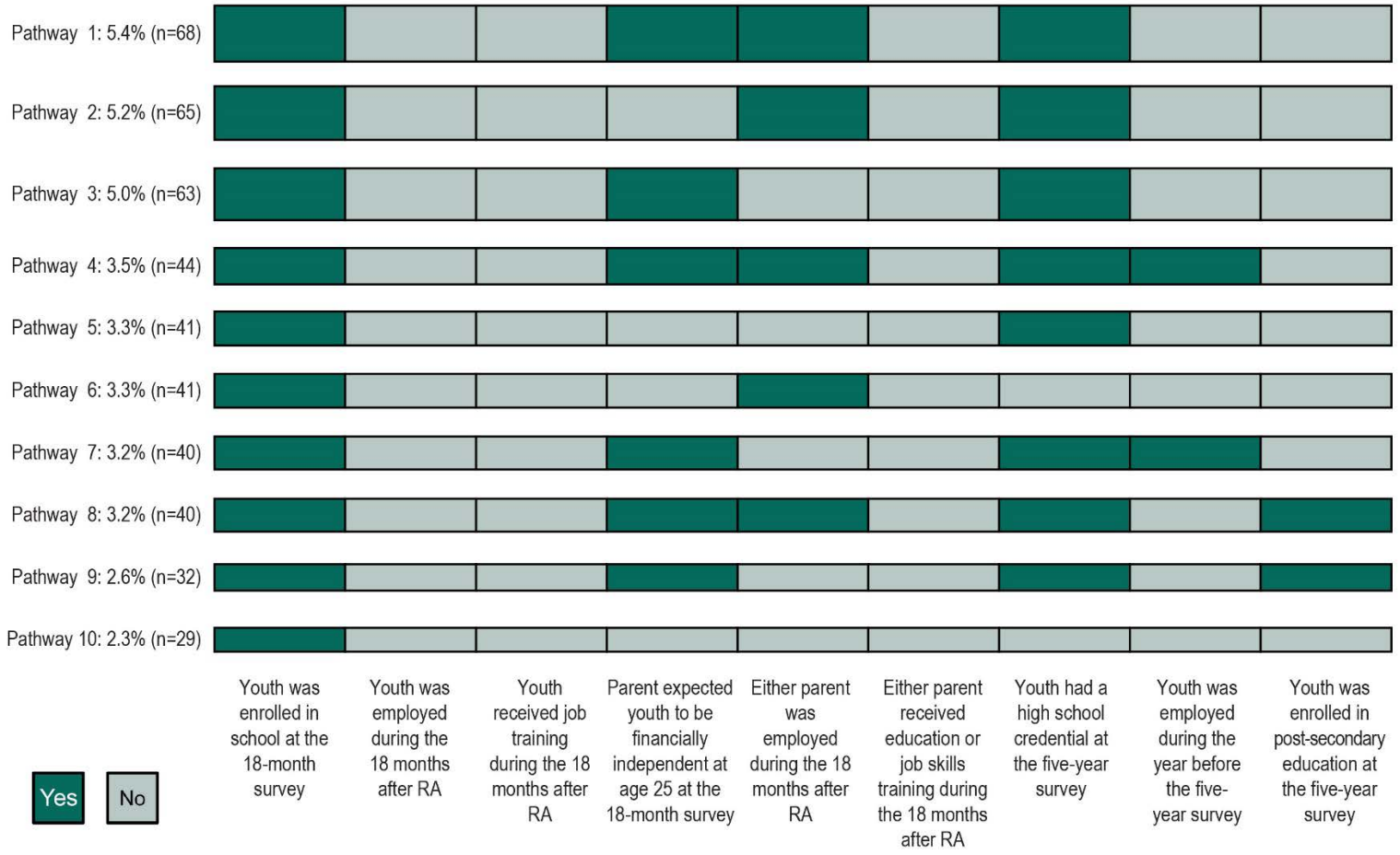
Figure A.3. ASPIRE: Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for ASPIRE youth enrollees. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; RA = random assignment.

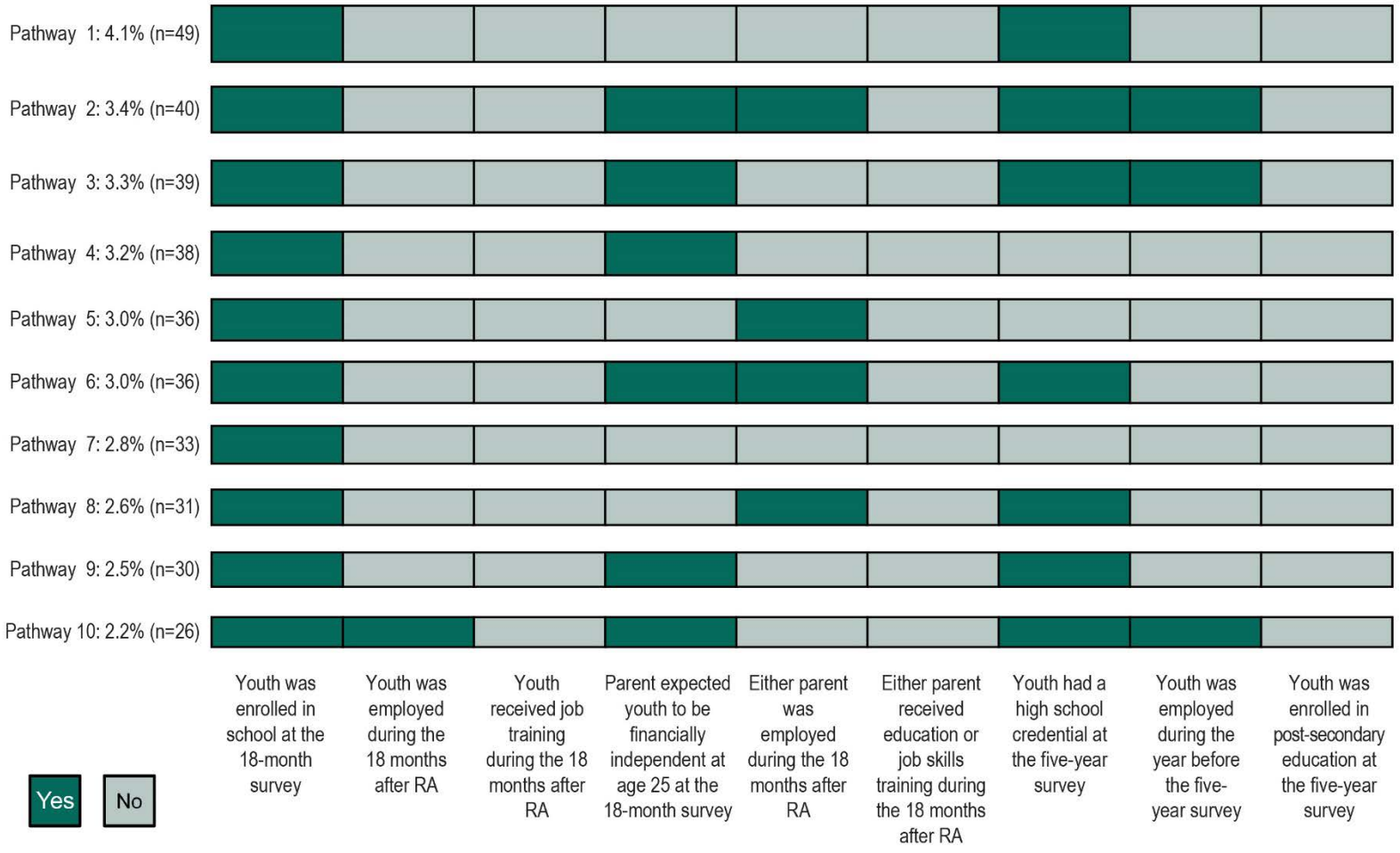
Figure A.4. CaPROMISE: Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for CaPROMISE youth enrollees. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

CaPROMISE = California PROMISE; RA = random assignment.

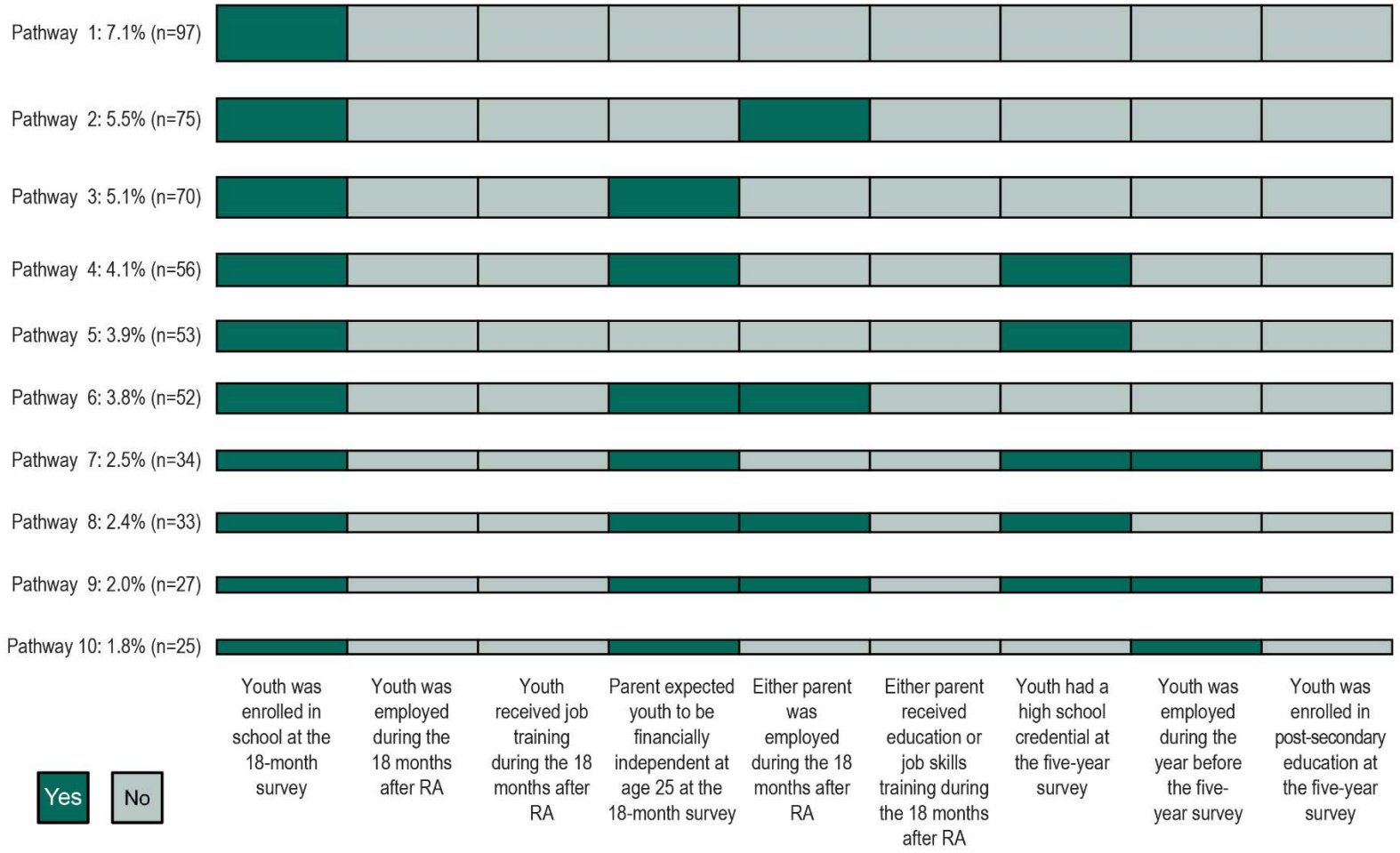
Figure A.5. MD PROMISE: Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for MD PROMISE youth enrollees. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

MD = Maryland; RA = random assignment.

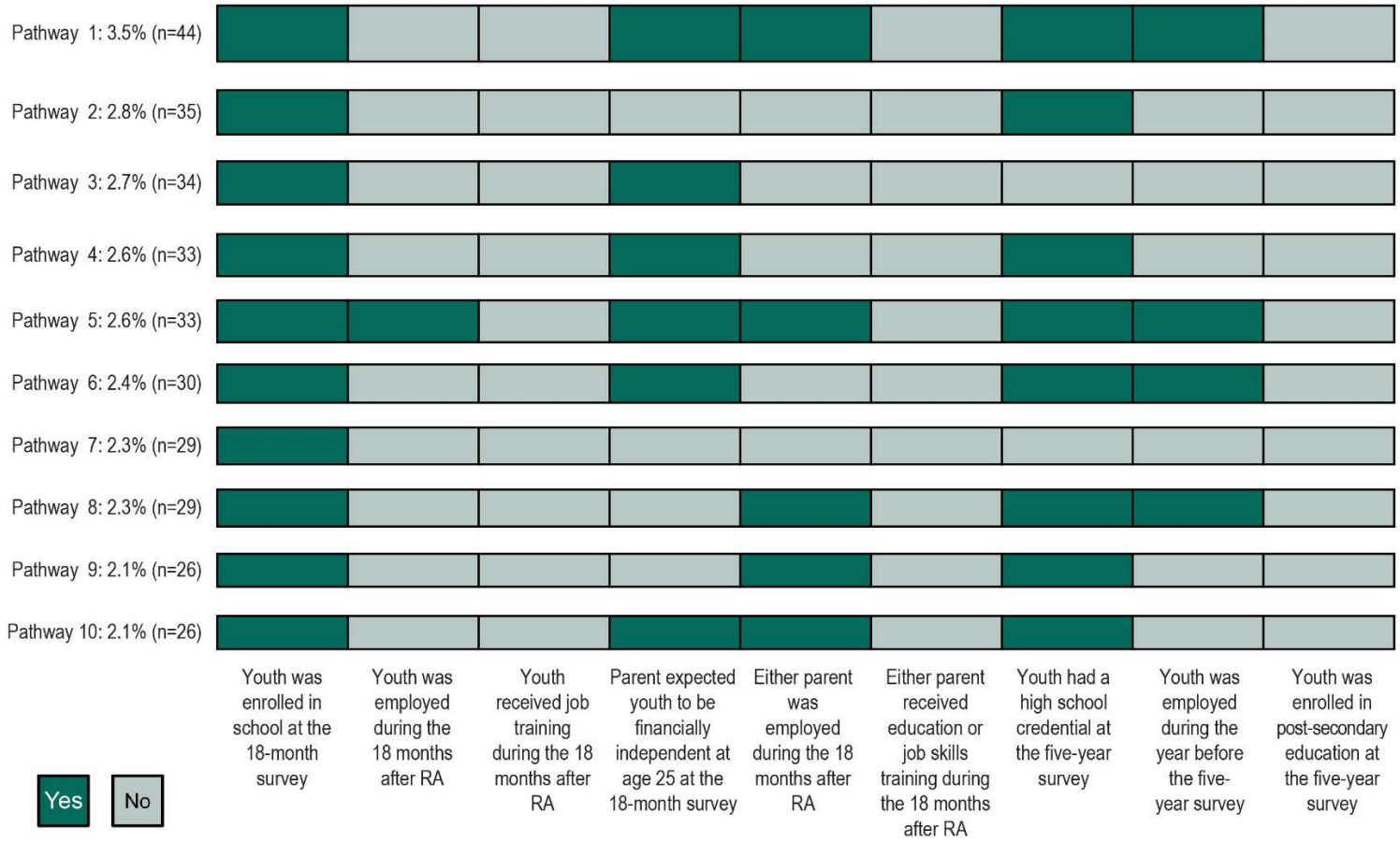
Figure A.6. NYS PROMISE: Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for NYS PROMISE youth enrollees. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

NYS = New York State; RA = random assignment.

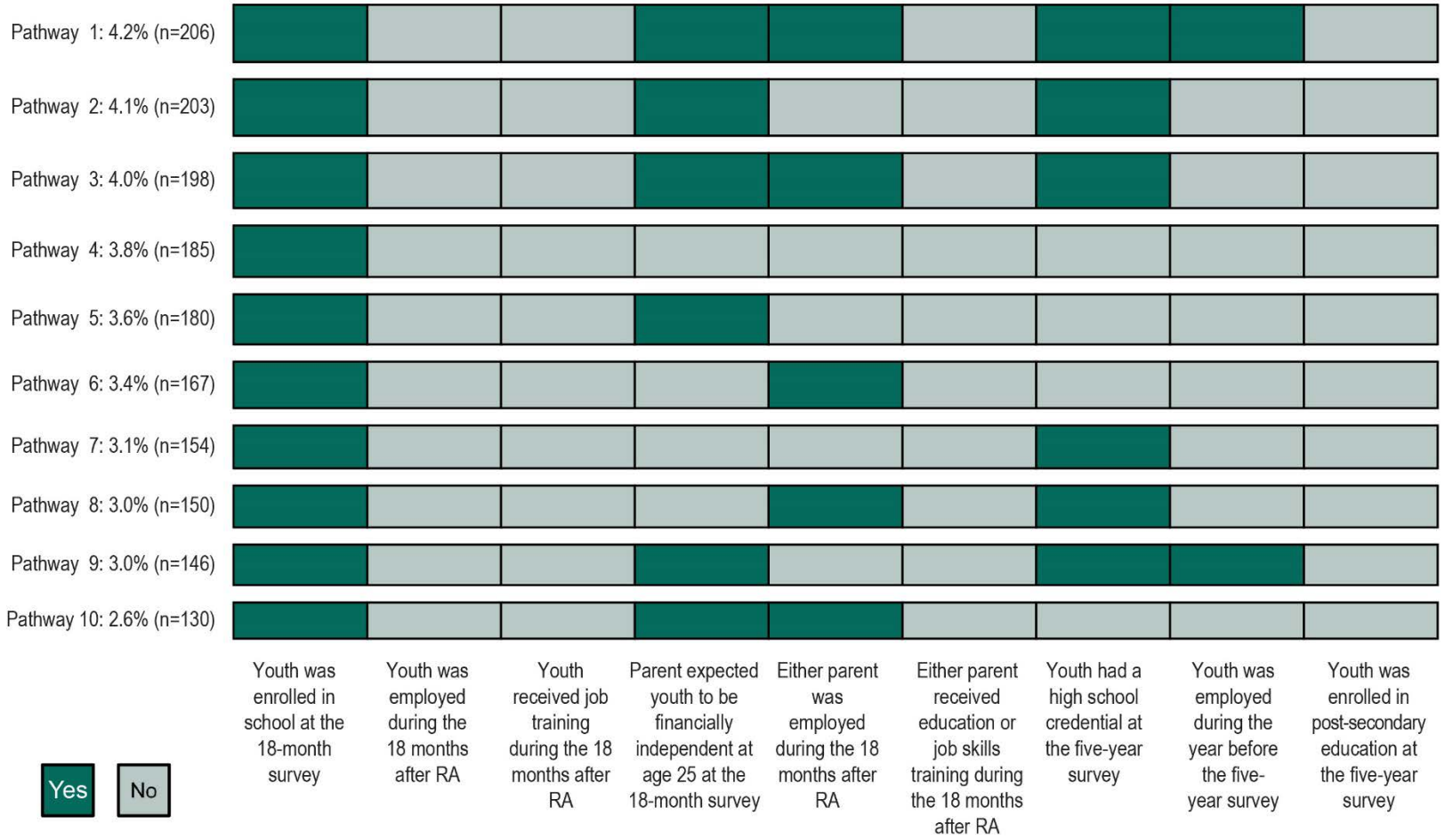
Figure A.7. WI PROMISE: Ten most common pathways for PROMISE youth



Note: This figure represents the 10 most common pathways for WI PROMISE youth enrollees. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment; WI = Wisconsin.

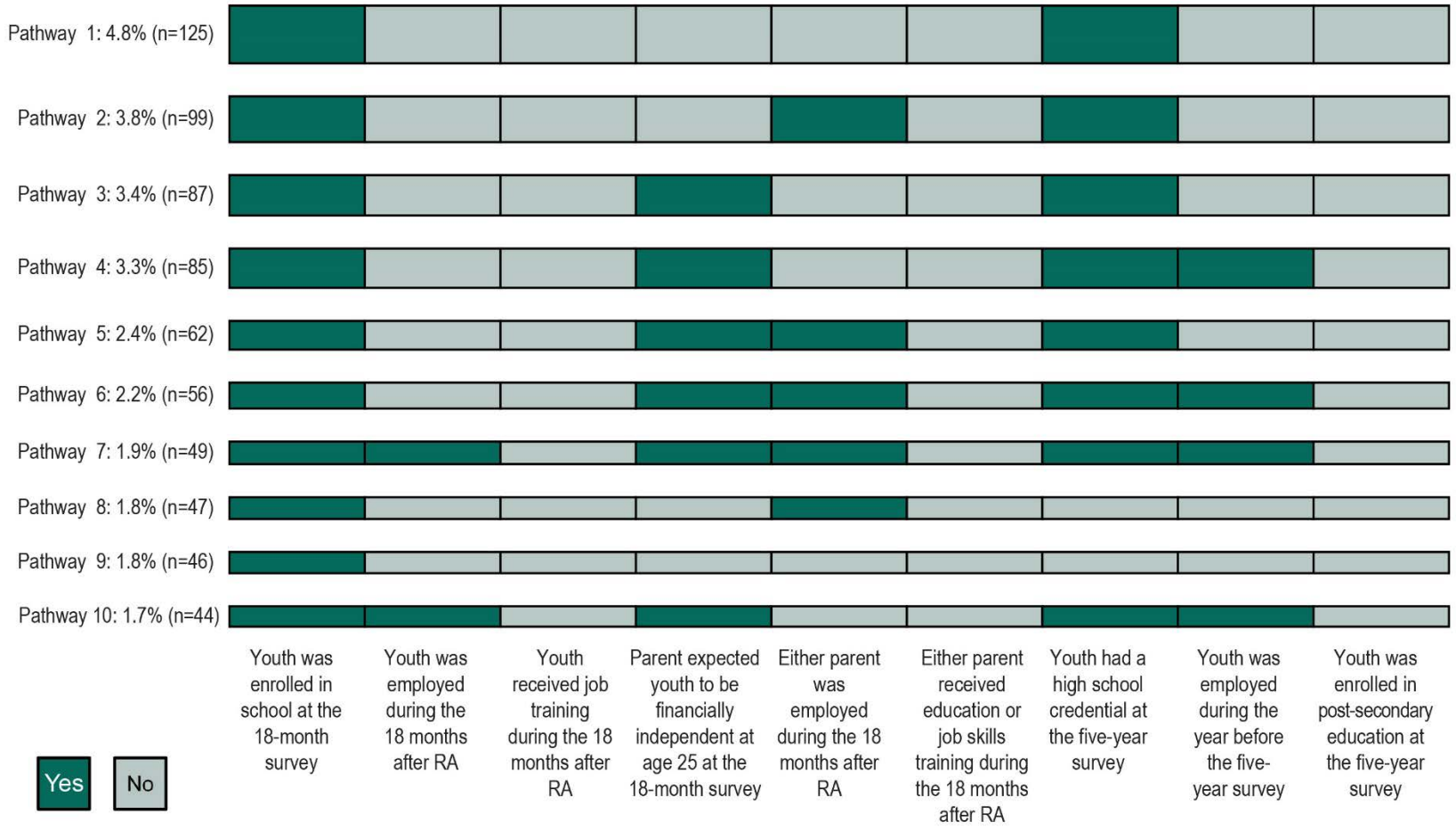
Figure A.8. Ten most common pathways for PROMISE youth who were age 14 or 15 at RA



Note: This figure represents the 10 most common pathways for PROMISE youth enrollees who were age 14 or 15 at RA. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

Figure A.9. Ten most common pathways for PROMISE youth who were age 16 at RA



Note: This figure represents the 10 most common pathways for PROMISE youth enrollees who were age 16 at RA. Each pathway is represented by one color-coded row that represents whether youth did or did not have the outcome listed on the x-axis and should be read from left to right. Pathways are stacked such that the most common pathway is at the top of the figure and each subsequent pathway below represents relatively fewer total youth; the number of youth in each pathway and the share of the total sample are listed on the x-axis.

RA = random assignment.

Table A.2. Number of total and unique pathways for PROMISE youth, by program

Program	Total number of program-specific pathways	Number of program-specific unique pathways	Percentage of youth represented by the program-specific top 10 pathways
Arkansas PROMISE	1,184	201	31.5
ASPIRE	1,253	217	36.7
CaPROMISE	1,254	207	36.9
MD PROMISE	1,195	240	30.0
NYS PROMISE	1,369	210	38.1
WI PROMISE	1,250	226	25.5

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California PROMISE; MD = Maryland; NYS = New York State; WI = Wisconsin.

Table A.3. PROMISE youth in states at 18 months and five years after RA, by profile

State	Overall	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile
18-month states				
Youth was employed in a paid job since RA	29.2	0	0	66.1
Youth was enrolled in school	91.6	92.9	90.9	90.3
Youth received any job training since RA	23.2	14.3	20.7	32.7
Parent was employed in a paid job since RA	55.4	50.9	0	74.5
Parent received any education or job skills training since RA	23.4	20.5	13.8	28.8
Parent expected youth to be financially independent at age 25	63.3	52.0	69.8	72.9
Five-year states				
Youth has a high school completion credential	70.4	62.5	72.8	77.7
Youth was employed in a paid job in the past year	44.8	0	100	75.1
Youth was enrolled in postsecondary education	14.5	11.8	13.5	17.3
Number of youth	7,505	3,320	872	3,320

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey.

RA = random assignment.

Table A.4. Arkansas PROMISE: Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	33.7	39.5	62.5	0.00†††
Baseline youth and parent characteristics				
Youth sex is female	37.1	35.1	34.8	0.75
Youth age at RA				0.07†
14 years	44.2	36.6	36.5	
15 years	25.5	32.8	27.3	
16 years	30.3	30.6	36.1	
Youth race and ethnicity				0.85
Non-Hispanic White	24.5	20.7	20.7	
Non-Hispanic Black	55.2	58.6	60.5	
Hispanic	9.4	9.0	8.3	
Non-Hispanic American Indian, other, or mixed race	9.4	9.5	8.4	
Missing	1.5	2.2	2.1	
Youth primary impairment				0.00†††
Intellectual or developmental	49.2	28.4	40.7	
Speech, hearing, or visual impairment	1.3	0.0	1.2	
Physical disability	11.3	12.2	8.4	
Other mental impairment	36.8	56.7	44.9	
Other or unknown disability	1.3	2.7	4.7	
Youth age at most recent SSI application	6.7	7.4	7.4	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	13.5	15.8	7.1	
Any parent received OASDI only	11.6	25.7	9.0	
Any parent received both SSI and OASDI	7.6	10.9	6.6	
No parent received any SSA payments	65.8	45.7	75.4	
No parent was included in the SSA data analyses	1.5	1.9	1.9	
Youth had earnings in the calendar year before RA	0.0	0.0	1.2	0.01†††
Youth earnings in the calendar year before RA ($)	0	0	13	0.14
Parent had earnings in the calendar year before RA	61.9	54.6	78.0	0.00†††
Parent earnings in the calendar year before RA ($)	13,293	10,136	18,738	0.00†††
Number of youth	387	146	651	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Race and ethnicity are derived from the 18-month survey.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Table A.5. ASPIRE: Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	49.2	48.8	51.1	0.80
Baseline youth and parent characteristics				
Youth sex is female	36.8	29.8	29.4	0.02††
Youth age at RA				0.01††
14 years	42.6	38.2	32.0	
15 years	28.9	31.0	34.5	
16 years	28.5	30.8	33.5	
Youth race and ethnicity				0.00†††
Non-Hispanic White	37.7	29.6	41.8	
Non-Hispanic Black	8.1	12.3	14.6	
Hispanic	41.6	42.7	31.1	
Non-Hispanic American Indian, other, or mixed race	12.5	15.4	12.4	
Missing	n.a.	n.a.	n.a.	
Youth primary impairment				0.00†††
Intellectual or developmental	52.2	40.0	35.7	
Speech, hearing, or visual impairment	1.6	2.2	3.8	
Physical disability	20.2	13.9	20.5	
Other mental impairment	20.4	40.4	35.7	
Other or unknown disability	5.5	3.5	4.2	
Youth age at most recent SSI application	6.7	7.5	7.7	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	10.1	14.7	6.1	
Any parent received OASDI only	9.9	14.4	8.1	
Any parent received both SSI and OASDI	4.2	7.9	3.2	
No parent received any SSA payments	68.1	52.5	75.0	
No parent was included in the SSA data analyses	7.7	10.5	7.6	
Youth had earnings in the calendar year before RA	0.7	0.0	3.7	0.00†††
Youth earnings in the calendar year before RA ($)	2	0	30	0.00†††
Parent had earnings in the calendar year before RA	66.9	53.5	81.7	0.00†††
Parent earnings in the calendar year before RA ($)	19,443	12,905	21,852	0.00†††
Number of youth	636	166	451	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Race and ethnicity are derived from the ASPIRE intake form. "n.a." is listed when the sample is too small to report a value.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; n.a. = not applicable; OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Table A.6. CaPROMISE: Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	43.1	47.3	62.1	0.00†††
Baseline youth and parent characteristics				
Youth sex is female	36.2	29.2	31.3	0.12
Youth age at RA				0.00†††
14 years	40.2	33.8	29.5	
15 years	29.9	27.4	34.6	
16 years	29.9	38.8	35.8	
Youth race and ethnicity				0.01†††
Non-Hispanic White	5.8	5.9	7.3	
Non-Hispanic Black	12.9	22.8	21.7	
Hispanic	71.7	62.6	60.4	
Non-Hispanic American Indian, other, or mixed race	7.9	7.1	9.3	
Missing	1.7	1.6	1.3	
Youth primary impairment				0.01†††
Intellectual or developmental	50.4	43.0	44.7	
Speech, hearing, or visual impairment	3.2	3.8	2.9	
Physical disability	22.1	19.8	16.7	
Other mental impairment	17.7	26.7	28.1	
Other or unknown disability	6.6	6.6	7.5	
Youth age at most recent SSI application	6.4	7.0	7.1	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	5.2	11.7	5.4	
Any parent received OASDI only	6.8	14.0	4.6	
Any parent received both SSI and OASDI	2.0	5.8	3.0	
No parent received any SSA payments	67.7	50.7	74.9	
No parent was included in the SSA data analyses	18.3	17.8	12.2	
Youth had earnings in the calendar year before RA	1.4	0.8	4.4	0.01†††
Youth earnings in the calendar year before RA ($)	21	1	107	0.02††
Parent had earnings in the calendar year before RA	76.0	43.8	81.2	0.00†††
Parent earnings in the calendar year before RA ($)	19,396	10,451	20,545	0.00†††
Number of youth	660	127	467	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Race and ethnicity are derived from the 18-month survey.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

CaPROMISE = California PROMISE; OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Table A.7. MD PROMISE: Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	43.3	38.4	56.9	0.00†††
Baseline youth and parent characteristics				
Youth sex is female	34.9	29.2	37.4	0.17
Youth age at RA				0.04††
14 years	30.7	25.3	22.5	
15 years	24.3	24.0	28.3	
16 years	45.0	50.7	49.2	
Youth race and ethnicity				0.10
Non-Hispanic White	20.9	19.4	15.1	
Non-Hispanic Black	62.1	58.7	63.4	
Hispanic	7.4	9.3	8.1	
Non-Hispanic American Indian, other, or mixed race	7.8	8.2	11.4	
Missing	1.8	4.4	2.0	
Youth primary impairment				0.00†††
Intellectual or developmental	45.6	36.0	29.0	
Speech, hearing, or visual impairment	1.4	0.8	2.7	
Physical disability	13.4	8.4	8.5	
Other mental impairment	36.3	49.8	57.4	
Other or unknown disability	3.2	5.0	2.5	
Youth age at most recent SSI application	7.2	7.9	8.5	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	8.7	16.5	5.5	
Any parent received OASDI only	8.8	17.6	7.0	
Any parent received both SSI and OASDI	5.1	8.1	4.1	
No parent received any SSA payments	71.8	52.1	78.3	
No parent was included in the SSA data analyses	5.6	5.8	5.2	
Youth had earnings in the calendar year before RA	2.5	1.6	6.9	0.00†††
Youth earnings in the calendar year before RA ($)	20	7	67	0.00†††
Parent had earnings in the calendar year before RA	65.6	40.6	78.1	0.00†††
Parent earnings in the calendar year before RA ($)	15,797	8,470	17,949	0.00†††
Number of youth	498	138	559	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Race and ethnicity are derived from the 18-month survey.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

MD = Maryland; OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Table A.8. NYS PROMISE: Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	48.1	53.2	54.8	0.07†
Baseline youth and parent characteristics				
Youth sex is female	31.8	38.2	30.7	0.23
Youth age at RA				0.00†††
14 years	41.8	37.3	32.5	
15 years	32.7	23.6	34.4	
16 years	25.6	39.1	33.1	
Youth race and ethnicity				0.00†††
Non-Hispanic White	8.5	7.9	8.3	
Non-Hispanic Black	35.8	45.2	46.6	
Hispanic	42.6	31.8	33.4	
Non-Hispanic American Indian, other, or mixed race	11.3	11.9	8.0	
Missing	1.8	3.2	3.8	
Youth primary impairment				0.00†††
Intellectual or developmental	62.8	55.1	50.5	
Speech, hearing, or visual impairment	1.1	1.9	0.4	
Physical disability	15.0	9.8	10.3	
Other mental impairment	15.6	31.9	35.1	
Other or unknown disability	5.5	1.3	3.7	
Youth age at most recent SSI application	5.6	6.5	6.5	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	11.9	19.9	9.0	
Any parent received OASDI only	8.4	11.2	8.9	
Any parent received both SSI and OASDI	4.9	14.3	4.3	
No parent received any SSA payments	69.0	52.9	71.8	
No parent was included in the SSA data analyses	5.8	1.8	6.0	
Youth had earnings in the calendar year before RA	2.0	8.2	13.4	0.00†††
Youth earnings in the calendar year before RA ($)	17	67	120	0.00†††
Parent had earnings in the calendar year before RA	61.3	34.3	73.3	0.00†††
Parent earnings in the calendar year before RA ($)	14,794	6,287	17,220	0.00†††
Number of youth	719	157	493	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Race and ethnicity are derived from the 18-month survey.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

NYS = New York State; OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income.

Table A.9. WI PROMISE: Baseline characteristics of youth and parents, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Treatment group	41.6	49.0	54.5	0.00†††
Baseline youth and parent characteristics				
Youth sex is female	36.8	29.8	30.7	0.09†
Youth age at RA				0.00†††
14 years	41.9	51.3	35.4	
15 years	28.6	22.5	28.1	
16 years	29.4	26.2	36.5	
Youth race and ethnicity				0.00†††
Non-Hispanic White	32.5	26.4	37.1	
Non-Hispanic Black	38.6	46.1	37.4	
Hispanic	18.8	12.9	10.8	
Non-Hispanic American Indian, other, or mixed race	8.0	13.3	13.2	
Missing	2.2	1.4	1.5	
Youth primary impairment				0.02††
Intellectual or developmental	41.4	47.1	36.0	
Speech, hearing, or visual impairment	1.4	1.4	1.3	
Physical disability	14.1	10.9	11.7	
Other mental impairment	36.7	38.1	47.0	
Other or unknown disability	6.3	2.4	3.9	
Youth age at most recent SSI application	7.0	7.2	7.7	
Parent SSA payment status at RA				0.00†††
Any parent received SSI only	17.6	18.4	7.9	
Any parent received OASDI only	7.6	10.4	8.2	
Any parent received both SSI and OASDI	7.3	14.9	6.0	
No parent received any SSA payments	61.8	53.4	75.4	
No parent was included in the SSA data analyses	5.6	2.9	2.5	
Youth had earnings in the calendar year before RA	2.9	2.2	4.1	0.37
Youth earnings in the calendar year before RA ($)	15	6	52	0.01††
Parent had earnings in the calendar year before RA	64.3	48.3	79.8	0.00†††
Parent earnings in the calendar year before RA ($)	14,200	7,096	17,535	0.00†††
Number of youth	420	138	692	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. Race and ethnicity are derived from the 18-month survey.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

OASDI = Old Age, Survivors, and Disability Insurance; RA = random assignment; SSA = Social Security Administration; SSI = Supplemental Security Income; WI = Wisconsin.

Table A.10. Arkansas PROMISE: Characteristics of youth and parents at the time of the five-year survey, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	0	10,585	7,597	0.00†††
SSA payments during Years 1 to 5 ($)	36,051	29,684	29,457	0.00†††
Self-determination score (mean; 0 to 100)	75.2	80.8	80.5	0.00†††
Youth living independently (%)	12.1	21.8	24.1	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	54.4	46.2	75.1	0.00†††
Parents' earnings in the past year ($)	14,458	10,281	23,527	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	21,657	33,595	15,476	0.00†††
Number of youth	387	146	651	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

RA = random assignment; SSA = Social Security Administration.

Table A.11. ASPIRE: Characteristics of youth and parents at the time of the five-year survey, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	n.a.	10,635	10,078	0.00†††
SSA payments during Years 1 to 5 ($)	37,496	28,120	26,988	0.00†††
Self-determination score (mean; 0 to 100)	76.7	80.4	81.3	0.00†††
Youth living independently (%)	5.2	15.9	24.1	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	64.7	39.9	84.2	0.00†††
Parents' earnings in the past year ($)	26,358	13,813	35,285	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	16,238	26,421	11,537	0.00†††
Number of youth	636	166	451	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. "n.a." is listed when the sample is too small to report a value.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; n.a. = not applicable; RA = random assignment; SSA = Social Security Administration.

Table A.12. CaPROMISE: Characteristics of youth and parents at the time of the five-year survey, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	n.a.	10,944	8,012	0.00†††
SSA payments during Years 1 to 5 ($)	42,795	36,360	32,544	0.00†††
Self-determination score (mean; 0 to 100)	74.1	79.8	80.2	0.00†††
Youth living independently (%)	3.2	12.7	11.6	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	72.4	53.4	78.2	0.00†††
Parents' earnings in the past year ($)	23,806	17,589	29,800	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	12,039	25,949	9,592	0.00†††
Number of youth	660	127	467	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. "n.a." is listed when the sample is too small to report a value.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

CaPROMISE = California PROMISE; n.a. = not applicable; RA = random assignment; SSA = Social Security Administration.

Table A.13. MD PROMISE: Characteristics of youth and parents at the time of the five-year survey, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	n.a.	9,459	8,869	0.00†††
SSA payments during Years 1 to 5 ($)	37,909	33,340	30,783	0.00†††
Self-determination score (mean; 0 to 100)	76.3	81.6	79.8	0.00†††
Youth living independently (%)	4.8	13.6	15.9	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	59.6	42.1	76.4	0.00†††
Parents' earnings in the past year ($)	19,306	13,144	27,414	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	16,302	28,723	10,920	0.00†††
Number of youth	498	138	559	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. "n.a." is listed when the sample is too small to report a value.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

MD = Maryland; RA = random assignment; n.a. = not applicable; SSA = Social Security Administration.

Table A.14. NYS PROMISE: Characteristics of youth and parents at the time of the five-year survey, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	n.a.	6,853	6,452	0.00†††
SSA payments during Years 1 to 5 ($)	37,864	34,100	30,488	0.00†††
Self-determination score (mean; 0 to 100)	75.1	80.3	80.2	0.00†††
Youth living independently (%)	1.8	7.6	10.0	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	57.6	34.8	64.6	0.00†††
Parents' earnings in the past year ($)	15,810	6,480	19,649	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	15,745	27,435	13,343	0.00†††
Number of youth	719	157	493	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. "n.a." is listed when the sample is too small to report a value.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

n.a. = not applicable; NYS = New York State; RA = random assignment; SSA = Social Security Administration.

Table A.15. WI PROMISE: Characteristics of youth and parents at the time of the five-year survey, by profile

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Youth outcomes				
Earnings in the past year ($)	n.a.	7,529	7,990	0.00†††
SSA payments during Years 1 to 5 ($)	39,786	34,786	31,694	0.00†††
Self-determination score (mean; 0 to 100)	73.4	79.6	80.0	0.00†††
Youth living independently (%)	9.0	21.1	25.4	0.00†††
Parent outcomes				
Either parent worked for pay in the past year (%)	63.0	53.0	80.0	0.00†††
Parents' earnings in the past year ($)	18,756	14,682	29,219	0.00†††
Parents' SSA payments during Years 1 to 5 ($)	19,558	30,887	13,868	0.00†††
Number of youth	420	138	692	

Source: PROMISE 18-month and five-year surveys and SSA administrative data.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories. "n.a." is listed when the sample is too small to report a value.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

n.a. = not applicable; RA = random assignment; SSA = Social Security Administration; WI = Wisconsin.

Table A.16. Arkansas PROMISE: Youth and families' use of services during the 18 months after RA, by profile (percentages)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services since RA	88.9	78.7	91.3	0.00†††
Received any key transition services since RA	55.9	56.0	77.5	0.00†††
Case management	36.8	39.5	62.4	0.00†††
Employment-promoting services	40.6	48.3	68.9	0.00†††
Benefits counseling	8.4	12.9	19.3	0.00†††
Financial education	25.7	29.9	44.1	0.00†††
Any service rated somewhat or very useful	95.0	97.3	99.2	0.02††
Received any family support services since RA	30.6	33.6	46.3	0.00†††

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference across the profiles is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

RA = random assignment.

Table A.17. ASPIRE: Youth and families' use of services during the 18 months after RA, by profile (percentages)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services since RA	92.7	90.6	92.9	0.66
Received any key transition services since RA	69.9	68.4	76.6	0.02††
Case management	53.6	50.9	60.0	0.05†
Employment promoting services	42.2	50.3	62.0	0.00†††
Benefits counseling	9.2	11.5	15.3	0.01††
Financial education	18.6	20.4	30.1	0.00†††
Any service rated somewhat or very useful	95.7	97.9	96.3	0.47
Received any family support services since RA	34.9	37.0	43.5	0.02††

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; RA = random assignment.

Table A.18. CaPROMISE: Youth and families' use of services during the 18 months after RA, by profile (percentages)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services since RA	92.4	95.3	95.4	0.10†
Received any key transition services since RA	53.6	61.6	80.4	0.00†††
Case management	36.3	39.3	61.7	0.00†††
Employment promoting services	38.3	51.2	71.6	0.00†††
Benefits counseling	7.8	10.8	18.3	0.00†††
Financial education	17.8	15.8	25.3	0.01†††
Any service rated somewhat or very useful	97.2	97.3	97.3	1.00
Received any family support services since RA	29.5	27.2	36.1	0.04††

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

CaPROMISE = California PROMISE; RA = random assignment.

Table A.19. MD PROMISE: Youth and families' use of services during the 18 months after RA, by profile (percentages)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services since RA	95.1	92.7	93.6	0.43
Received any key transition services since RA	72.4	62.6	81.5	0.00†††
Case management	49.1	45.0	61.9	0.00†††
Employment promoting services	56.2	55.9	73.3	0.00†††
Benefits counseling	14.8	17.5	26.7	0.00†††
Financial education	22.9	23.2	35.0	0.00†††
Any service rated somewhat or very useful	97.1	98.7	97.3	0.55
Received any family support services since RA	45.5	43.1	49.5	0.26

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

MD = Maryland; RA = random assignment.

Table A.20. NYS PROMISE: Youth and families' use of services during the 18 months after RA, by profile (percentages)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services since RA	92.0	90.9	95.5	0.02††
Received any key transition services since RA	64.1	58.6	74.9	0.00†††
Case management	44.3	39.1	52.6	0.00†††
Employment promoting services	47.0	47.4	63.8	0.00†††
Benefits counseling	7.0	10.1	10.5	0.09†
Financial education	17.1	18.4	19.8	0.50
Any service rated somewhat or very useful	96.8	92.2	96.7	0.29
Received any family support services since RA	31.4	40.6	36.5	0.04††

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

NYS = New York State; RA = random assignment.

Table A.21. WI PROMISE: Youth and families' use of services during the 18 months after RA, by profile (percentages)

Domain	Low education and employment profile	Employed and not in post-secondary school profile	High education and employment profile	*p*-value
Received any transition services since RA	89.7	89.0	94.5	0.01†††
Received any key transition services since RA	64.6	68.0	80.9	0.00†††
Case management	51.3	49.6	66.0	0.00†††
Employment promoting services	50.6	56.4	71.7	0.00†††
Benefits counseling	8.9	12.4	16.4	0.00†††
Financial education	14.3	14.9	27.6	0.00†††
Any service rated somewhat or very useful	93.4	97.9	96.7	0.07†
Received any family support services since RA	38.4	36.4	45.6	0.02††

Source: PROMISE 18-month and five-year surveys.

Note: The sample includes all youth who completed the PROMISE 18-month and five-year surveys and whose parents completed the 18-month survey. We weighted the statistics to adjust for survey nonresponse. The *p*-value for a multinomial categorical variable, which we present in the row for the variable label, is based on a chi-square test across all categories.

†/††/††† Difference is significantly different from zero (*p*-value is less than .10/.05/.01) using a chi-square test.

RA = random assignment; WI = Wisconsin.

Table A.22. Arkansas PROMISE: Adjusted relationship between youth's use of transition services and profile

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.30	1.30
Case management	1.00	0.88	1.74†††
Employment-promoting services	1.00	1.23	2.29†††
Financial education	1.00	1.02	1.12

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Impact estimate is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

Table A.23. ASPIRE: Adjusted relationship between youth's use of transition services and profile

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.29	1.08
Case management	1.00	0.74	0.91
Employment-promoting services	1.00	1.44†	1.87†††
Financial education	1.00	0.80	1.15

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Impact estimate is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment.

Table A.24. CaPROMISE: Adjusted relationship between youth's use of transition services and employment and education profile

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.41	1.70††
Case management	1.00	0.82	1.65†††
Employment-promoting services	1.00	1.67††	2.82†††
Financial education	1.00	0.55††	0.75

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Impact estimate is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

CaPROMISE = California PROMISE.

Table A.25. MD PROMISE: Adjusted relationship between youth's use of transition services and profile

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.30	1.41†
Case management	1.00	0.74	1.10
Employment-promoting services	1.00	0.94	1.65†††
Financial education	1.00	0.99	1.23

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Impact estimate is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

MD = Maryland.

Table A.26. NYS PROMISE: Adjusted relationship between youth's use of transition services and employment and education profiles

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.30	1.26
Case management	1.00	0.90	1.12
Employment-promoting services	1.00	0.91	1.83†††
Financial education	1.00	0.88	0.79

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Impact estimate is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

NYS = New York State.

Table A.27. WI PROMISE: Adjusted relationship between youth's use of transition services and profile

Transition service	Relative risk ratio		
	Low education and employment profile (reference)	Employed and not in postsecondary school profile	High education and employment profile
Benefits counseling	1.00	1.45	1.25
Case management	1.00	0.77	1.22
Employment-promoting services	1.00	1.14	1.89†††
Financial education	1.00	0.92	1.73†††

Source: PROMISE 18-month and five-year surveys.

Note: This table shows the regression-adjusted relative risk ratios for the use of PROMISE transition services, relative to the baseline case of the "Low education and employment" profile. We weighted the statistics to adjust for survey nonresponse.

†/††/††† Impact estimate is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

WI = Wisconsin.

2. Examining the mechanisms behind the PROMISE programs' five-year impacts

a. The role of services and work experiences in mediating the programs' average effects on five-year outcomes

Appendix Table A.28 presents the findings from the mediation analyses focused on key services, using data pooled across the six programs. For each outcome examined, it presents estimates of the six PROMISE programs' average indirect effects through the key transition services required by the cooperative agreements and the average unattributed effects, as well as the average total effect. Appendix Table A.29 presents the findings from the mediation analyses that examined the broader set of potential mediators, using data pooled across the six programs. For each five-year outcome examined, it presents the estimates of the six PROMISE programs' average indirect effects through a range of services and early work experiences, as well as the average unattributed and total effects.

Table A.28. Indirect and unattributed average effects of the PROMISE programs on outcomes (values in percentages, unless otherwise noted)

Outcome	Potential mediators during the 18 months after RA							
	Received case management	Received benefits counseling	Received financial education	Received employment-promoting services	Parent received training or information on youth's disability	Unattributed effect	Total effect	Sample size
Has a GED, high school diploma, or certificate of completion	0.1	0.2	0.5***	2.0***	-0.3**	-4.2***	-1.6	7638
Employed in a paid job in the past year	-0.0	0.5*	0.4**	2.1***	-0.5***	0.9	3.4***	7693
Earnings in the past year ($)	-129*	174***	80*	292***	-116***	85	386*	7693
Youth expects to be financially independent at age 25	-1.1*	0.2	0.5	0.0	-0.1	2.1	1.6	5012
Received SSA payments in Year 5	1.1***	-0.6**	-0.5***	-0.3	0.7***	1.4	1.8*	8848
SSA payments during Years 1–5 ($)	311***	-62	-108**	-184**	162***	208	326	8848
Income from earnings and SSA payments in the past year ($)	-31	89	44	216***	-49*	250	520***	7693

Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This table shows the indirect and unattributed average effects based on regression-adjusted estimates of all PROMISE programs. The indirect effect of the PROMISE programs through a mediator is the effect on the outcome that operates through the mediator. The unattributed effect on an outcome is the effect that operates through channels other than the mediators examined. The total effect is the sum of the indirect and unattributed effects. The sample includes all youth who completed the 18-month and five-year surveys and whose parents completed the 18-month survey. We use weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. All outcomes are measured at the time of the five-year parent survey, unless otherwise specified. Monetary values are in 2020 dollars. We pooled data across the programs and weighted each program equally in order to estimate average effects.

*/**/*** Effect is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

CaPROMISE = California PROMISE; GED = General Educational Development; RA = random assignment; SSA = Social Security Administration.

Table A.29. Expanded set of indirect and unattributed average effects of the PROMISE programs on outcomes (values in percentages, unless otherwise noted)

Outcome	Potential mediators during the 18 months after RA											
	Received case management	Received benefits counseling	Received financial education	Received employment promoting services	Parent received training or information on youth's disability	Received help learning about or getting into a school or training	Received help with life skills	Received job-related training	Employed in a paid job	Unattributed effect	Total effect	Sample size
Has a GED, high school diploma, or certificate of completion	-0.1	-0.1	0.2	1.1***	-0.3*	1.3***	-0.2	0.0	1.4***	-4.7***	-1.3	7452
Employed in a paid job in the past year	-0.6	0.1	0.0	0.7*	-0.5***	1.4***	-0.2	0.4*	3.1***	-1.1	3.4***	7503
Earnings in the past year ($)	-216***	113*	13	97	-106***	215***	-29	-7	550***	-254	377*	7503
Youth expects to be financially independent at age 25	-1.3**	-0.1	0.3	-0.6	-0.1	1.0***	-0.0	-0.7**	1.6***	1.7	1.7	4897
Received SSA payments in Year 5	1.6***	-0.2	-0.2	0.4	0.5***	-1.5***	0.4***	0.4*	-2.0***	3.3***	2.5**	7703
SSA payments during Years 1–5 ($)	508***	54	-14	-5	113***	-386***	84**	46	-577***	581*	404	7703
Income from earnings and SSA payments in the past year ($)	-93	72	2	107*	-45	65*	10	20	334***	57	528***	7503

Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This table shows the indirect and unattributed average effects based on regression-adjusted estimates of all PROMISE programs. The indirect effect of the PROMISE programs through a mediator is the effect on the outcome that operates through the mediator. The unattributed effect on an outcome is the effect that operates through channels other than the mediators examined. The total effect is the sum of the indirect and unattributed effects. The sample includes all youth who completed the 18-month and five-year surveys and whose parents completed the 18-month survey. We use weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. All outcomes are measured at the time of the five-year parent survey, unless otherwise specified. Monetary values are in 2020 dollars. We pooled data across the programs and weighted each program equally in order to estimate average effects.

*/**/*** Effect is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

CaPROMISE = California PROMISE; GED = General Educational Development; RA = random assignment; SSA = Social Security Administration.

b. The role of services and work experiences in mediating each program's effects on five-year outcomes

To understand the link between each program's impacts on mediators and its ultimate five-years impacts, we decomposed the significant impacts of each PROMISE program by the key 18-month mediators. The goal of this analysis was to understand program-specific patterns in the indirect effects through mediators. We only decomposed impacts on the five-year outcomes for which a specific program had a significant impact. Thus, the outcomes analyzed differ by program. In Appendix Table A.30, we summarize the evidence on how the key services that were required by the cooperative agreements mediated the impacts of each program on youth's five-year outcomes. In Appendix Tables A.31 and A.32 we present estimates of the indirect and unattributed effects of each PROMISE program on the subset of five-year outcomes that the program had a significant impact on according to the five-year impact evaluation (Patnaik et al. 2022a).

Table A.30. Summary of indirect effects through key services on youth outcomes, by program

Program	Outcome	Evidence of indirect effects
Arkansas PROMISE	Covered by any health insurance	None of the key services were significant mediators of the program's impact on this outcome.
ASPIRE	Has a GED, high school diploma, or certificate of completion	The program's indirect effect through benefits counseling was to increase this outcome.
CaPROMISE	Income in the past year ($)	None of the key services were significant mediators of the program's impact on this outcome.
MD PROMISE	Received SSA payments in Year 5	The program's indirect effect through case management was to increase this outcome; the program's indirect effect through financial education was to increase this outcome.
	SSA payments in Year 5 ($)	The program's indirect effect through financial education was to decrease this outcome.
	SSA payments during Years 1–5 ($)	The program's indirect effect through case management was to increase this outcome.
	Income in the past year ($)	None of the key services were significant mediators of the program's impact on this outcome.
NYS PROMISE	Enrolled in an educational or training program	The program's indirect effect through benefits counseling was to decrease this outcome.
	Employed in a paid job in the past year	None of the key services were significant mediators of the program's impact on this outcome.
	Youth expects to be financially independent at age 25	None of the key services were significant mediators of the program's impact on this outcome.
WI PROMISE	Employed in a paid job in the past year	The program's indirect effect through financial education was to increase this outcome; its indirect effect through parent training or information on youth's disability was to decrease this outcome.
	Income in the past year ($)	The program's indirect effect through employment-promoting services was to increase this outcome; its indirect effect through parent training or information on youth's disability was to decrease this outcome.

Note: See Appendix Tables A.29-A.34 for detailed estimates of each program's indirect, unattributed, and total effects.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California PROMISE; GED = General Educational Development; MD = Maryland; NYS = New York; SSA = Social Security Administration; WI = Wisconsin.

In the program-specific analyses, we identified fewer services to be mediators of impacts, compared to the pooled analyses. In the pooled analyses, we identified at least one service as a mediator of the average impact on every outcome; for some outcomes, we identified as many as four mediators. In the program-specific analyses, we did not identify any services as mediators for five of the twelve program-outcome combinations examined; for all outcomes, we identified at most two mediators. Most outcomes examined in the pooled analysis were also examined in at least one program-specific analysis. We found no instances of a program-specific analysis pointing to a significant mediating effect that worked in the opposite direction of what we found in the pooled data analysis.

For some outcomes, more than one program had an impact on the outcome, but we were only able to identify key services as significant mediators for a subset of the programs (Table A.31). For example, both CaPROMISE and WI PROMISE increased youth's total income in the year before the survey; in WI PROMISE, employment-promoting services emerged as an important mediator of the impact on this outcome, but for CaPROMISE we did not identify significant mediating effects through any of the key services.

The findings from the program-specific analyses confirm the importance of early employment experiences. NYS PROMISE and WI PROMISE were the only two programs to have a persistent impact on youth's employment five years after RA (Patnaik et al. 2022a). For both programs, having paid employment during the 18 months after RA and received help learning about or getting into a school or training were significant mediators of the programs' impacts on employment in the year before the survey. The evidence suggests that the primary importance of employment-promoting services as a mediator was to get youth early work experience. For example, WI PROMISE had a sizeable impact on youth's use of employment-promoting services because the program model emphasized early engagement of youth in VR.[5] About 97 percent of treatment group youth applied for VR, compared to only 14 percent of control group youth (Mamun et al. 2019). However, once we account for early work experience, employment-promoting services are not a significant mediator of WI PROMISE's impact on youth's employment five years after RA. This is consistent with the idea that employment-promoting services are important but primarily for their role in helping youth obtain early paid work experiences.

[5] Most program activities for WI PROMISE were housed within its Division of Vocational Rehabilitation (DVR). The program's service model emphasized early engagement of youth in VR services, and case counselors comprised mostly current or former DVR counselors employed by DVR to work exclusively with PROMISE youth in the treatment group. The program increased the share of youth who applied to DVR by 83 percentage points and the share who received VR services by 71 percentage points—nearly six and eight times higher, respectively, than in the control group (Mamun et al. 2019). When we consider use of employment-promoting services including VR services, the program had an impact of 37 percentage points, relative to 46 percent of control group youth.

Table A.31. Indirect and unattributed effects of each PROMISE program on outcomes (values in percentages, unless otherwise noted)

Program and outcome	Potential mediators during the 18 months after RA							
	Received case management	Received benefits counseling	Received financial education	Received employment-promoting services	Parent received training or information on youth's disability	Unattributed effect	Total effect	Sample size
Arkansas PROMISE								
Covered by any health insurance	0.3	-0.3	-1.0	1.1	0.6	-6.8**	-6.1***	1151
ASPIRE								
Has a GED, high school diploma, or certificate of completion	0.5	1.2*	0.1	0.4	-0.4	-6.0**	-4.2*	1282
CaPROMISE								
Income from earnings and SSA payments in the past year ($)	-60	60	-77	239	6	815	984**	1303
MD PROMISE								
Received SSA payments in Year 5	1.3*	-0.8	-0.8*	-0.1	0.1	8.1***	7.8***	1436
SSA payments in Year 5 ($)	96	-126	-92**	16	26	410*	331	1436
SSA payments during Years 1–5 ($)	364*	-84	-186	-65	-11	1,634**	1,652**	1436
Income from earnings and SSA payments in the past year ($)	7	136	156	140	7	188	634	1228
NYS PROMISE								
Enrolled in an educational or training program	-0.4	-1.0***	0.3	-0.7	0.3	-3.5	-5.0**	1363
Employed in a paid job in the past year	-0.0	0.2	-0.2	0.5	-0.1	6.0**	6.6**	1396
Youth expects to be financially independent at age 25	0.1	-0.2	-0.1	-0.6	-0.1	6.1*	5.2	837
WI PROMISE								
Employed in a paid job in the past year	0.2	0.3	1.8**	2.2	-0.9**	4.2	7.8***	1281
Income from earnings and SSA payments in the past year ($)	-134	5	158	483**	-122*	822	1,211**	1281

Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This table shows the indirect and unattributed effects based on regression-adjusted estimates of each PROMISE program. For each program, we examine only the subset of five-year youth outcomes that the program had a significant impact on according to the five-year impact evaluation (Patnaik et al. 2022a).The indirect effect through a mediator is the effect of the program on the outcome that operates through the mediator. The unattributed effect on an outcome is the effect that operates through channels other than the mediators examined. The total effect is the sum of the indirect and unattributed effects. The sample includes all youth who completed the 18-month and five-year surveys and whose parents completed the 18-month survey. We use weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. All outcomes are measured at the time of the five-year parent survey, unless otherwise specified. Monetary values are in 2020 dollars.

*/**/*** Effect is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California PROMISE; GED = General Educational Development; MD = Maryland; NYS = New York; RA = random assignment; SSA = Social Security Administration; WI = Wisconsin.

Table A.32. Indirect and unattributed effects of each PROMISE program on outcomes (values in percentages, unless otherwise noted)

Program and outcome	Potential mediators during the 18 months after RA											
	Received case management	Received benefits counseling	Received financial education	Received employment-promoting services	Parent received training or information on youth's disability	Received help learning about or getting into a school or training	Received help with life skills	Received job-related training	Employed in a paid job	Unattributed effect	Total effect	Sample size
Arkansas PROMISE												
Covered by any health insurance	0.7	-0.3	-0.8	2.1	0.8	-0.8	-0.7	-0.0	0.9	-7.9**	-6.1***	1127
ASPIRE												
Has a GED, high school diploma, or certificate of completion	0.1	0.8	-0.1	0.1	-0.4	1.1***	0.4	-0.1	0.1	-6.1**	-3.9	1251
CaPROMISE												
Income from earnings and SSA payments in the past year ($)	-102	82	-89	152	28	-54	-106	104	279**	713	1,007**	1267
MD PROMISE												
Received SSA payments in Year 5	2.4***	-0.5	-0.4	0.7	0.1	-1.9***	0.1	0.2	-3.3***	12.9***	10.1***	1239
SSA payments in Year 5 ($)	192**	-100	-59	60	23	-166***	6	17	-299***	794***	469**	1239
SSA payments during Years 1–5 ($)	603***	7	-58	8	-23	-375***	23	23	-712***	2,321***	1,817***	1239
Income from earnings and SSA payments in the past year ($)	-52	45	84	54	13	73	12	28	576***	-207	627	1201
NYS PROMISE												
Enrolled in an educational or training program	-0.1	-0.9**	0.4*	0.0	0.3	-0.9**	-0.0	-0.3	-0.7**	-3.1	-5.4**	1331
Employed in a paid job in the past year	-0.0	0.1	-0.3	-0.2	-0.0	1.0***	-0.1	0.0	1.5***	4.3*	6.4**	1362
Youth expects to be financially independent at age 25	-0.1	-0.2	-0.3	-1.0	-0.2	0.5	0.4	-0.5	0.4	6.3*	5.3	820

Program and outcome	Potential mediators during the 18 months after RA											
	Received case management	Received benefits counseling	Received financial education	Received employment-promoting services	Parent received training or information on youth's disability	Received help learning about or getting into a school or training	Received help with life skills	Received job-related training	Employed in a paid job	Unattributed effect	Total effect	Sample size
WI PROMISE												
Employed in a paid job in the past year	-0.7	0.1	0.8	0.5	-0.9**	0.8**	0.0	1.1	1.9***	4.5	8.1***	1248
Income from earnings and SSA payments in the past year ($)	-295	4	42	296	-117	65	65	-87	273***	979*	1,225**	1248

Source: PROMISE 18-month and five-year surveys and SSA administrative records.

Note: This table shows the indirect and unattributed effects based on regression-adjusted estimates of each PROMISE program. For each program, we examine only the subset of five-year youth outcomes that the program had a significant impact on according to the five-year impact evaluation (Patnaik et al. 2022a).The indirect effect through a mediator is the effect of the program on the outcome that operates through the mediator. The unattributed effect on an outcome is the effect that operates through channels other than the mediators examined. The total effect is the sum of the indirect and unattributed effects. The sample includes all youth who completed the 18-month and five-year surveys and whose parents completed the 18-month survey. We use weights to account for survey nonresponse and, in the case of CaPROMISE, survey sampling. All outcomes are measured at the time of the five-year parent survey, unless otherwise specified. Monetary values are in 2020 dollars.

*/**/*** Effect is significantly different from zero (*p*-value is less than .10/.05/.01) using a two-tailed *t*-test.

ASPIRE = Achieving Success by Promoting Readiness for Education and Employment; CaPROMISE = California PROMISE; GED = General Educational Development; MD = Maryland; NYS = New York; RA= random assignment; SSA = Social Security Administration; WI = Wisconsin.

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