Valley Initiative for **Development and Advancement** (VIDA)

> **Three-Year Impact Report**

OPRE Report 2021-96

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Valley Initiative for Development and Advancement (VIDA): Three-Year Impact Report

A Pathways for Advancing Careers and Education (PACE) / Career Pathways Intermediate Outcomes Study Publication

OPRE Report 2021-96

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Overview

This report documents the impacts for the Valley Initiative for Development and Advancement program (VIDA) three years after random assignment. Established in 1995, VIDA is a nonprofit, community-based organization created through a partnership of faith-based leaders and the business community of the Lower Rio Grande Valley, Texas. At the onset of the PACE project, VIDA had operated its program model for more than 15 years.

The program supports training for unemployed and other low-income adults to obtain certificates and degrees that are expected to lead to jobs that pay well and are in demand locally. The program carefully screens applicants for their capability to attend training full-time and their need for VIDA services and supports.

The major VIDA program components are:

- Required full-time enrollment in certificate programs, associate degree programs, or the final two years of bachelor's degree programs to enable faster progress and reduce the time for other life events to interfere with completion.
- Weekly mandatory group and individual counseling sessions to identify and address barriers early and to provide workshops on topics to help participants succeed in school (e.g., study skills) and in the labor market (e.g., resume writing).
- Financial support—after accounting for eligibility for other financial support such as Pell grants—for tuition, books, and other needs to reduce financial barriers to completion.
- A 16-week, accelerated, full-time basic skills ("bridge") program, the "College Prep Academy," for those who are not college ready designed to prepare them to pass college entrance exams.
- Regular assessment of local labor markets including consulting with local economic development corporations to learn about current and anticipated local labor needs to identify occupations where support for training from VIDA will prepare participants for employment opportunities.

The combination of generous financial and personal supports, and substantial participant requirements result in a "high support, high expectations" program.

VIDA is part of the **Pathways for Advancing Careers and Education (PACE)** project. Funded by the Administration for Children and Families within the U.S. Department of Health and Human Services, PACE is a multi-site experimental evaluation of nine programs that incorporate some features of a career pathways framework. This evaluation, the Career Pathways Intermediate Outcomes Study, extends the follow-up period to three years for programs in the PACE project. Future reports produced by the Career Pathways Long-term Outcomes Study will extend the follow-up period further.

Purpose

This research was undertaken to evaluate whether VIDA was successful in providing training to low-income, low-skilled adults and whether the program's efforts led to impacts on credentials, earnings, and other life outcomes. VIDA provides substantial financial and personal supports to low-income students so they can complete college-level occupational programs that prepare them for well-paying jobs in demand in the region.

Research Questions

Three years after random assignment, what were the impacts of VIDA on:

- education outcomes;
- entry into career-track employment and higher earnings; and
- individual and family well-being, including income and other life outcomes?

Key Findings

VIDA increased receipt of a college credential requiring a year or more of training, the confirmatory outcome in the education domain for this report.

Three years after random assignment, VIDA's impact on receipt of college credentials requiring a year or more of training was 9 percentage points: 61 percent of the treatment group received such a credential, compared to 52 percent of the control group.

■ VIDA also had positive impacts on many other education outcomes.

Compared to members of the control group, VIDA increased for treatment group members fulltime-equivalent college enrollment (2 months), college credits (6 credits), and receipt of an associate degree or higher (7 percentage points). Also, notably, the enrollment, credit, and credential impact estimates are larger by the end of Year 4 than at the end of Year 2 (the followup period for the initial, short-term report), and positive impacts on college enrollment in Year 4 are as large as in Year 2, raising the possibility that educational credential impacts may continue to grow.

VIDA did not have a detectable impact on earnings in quarters 12-13, the confirmatory outcome in the employment domain.

In Quarters 12-13 both the treatment and control groups earned somewhat over \$6,000. As expected, in quarters 2 through 5, a period in which VIDA had large positive enrollment impacts, the program had negative impacts on earnings. From quarter 6 through 16, there were no positive or negative impacts on earnings.

■ VIDA affected few other employment-related outcomes.

As expected by the theory of change, a smaller proportion of the treatment group worked than did the control group in a period of high levels of active participation in VIDA (quarters 3 through 6), but not afterwards. At three years, VIDA increased the proportion of treatment group members working in jobs requiring at least mid-level skills by almost 6 percentage points: 44

percent of the treatment group versus 39 percent of the control group. But the program did not affect average hourly wages.

■ VIDA had few effects on other economic outcomes.

Consistent with the prominent role of enhanced financial support in the program, VIDA reduced participants' student debt by slightly more than \$1,100, or \$3,312 in the treatment group compared to \$4,416 in the control group. But it had few other effects on other financial outcomes.

Methods

The evaluation used an experimental design in which program applicants were assigned at random to a treatment group that could access the program or to a control group that could not. It then compared their outcomes. Between November 2011 and June 2014, a total of 958 program applicants were randomly assigned (478 to the treatment group and 480 to the control group). This impact study used data from a follow-up survey conducted three years after random assignment, four years of education records from VIDA's partner colleges, and four years of earnings records from the National Directory of New Hires. Some analyses in this report extend to five years of education and earnings records for a cohort of early study enrollees that represent 80 percent of the full sample. The study measures impacts on training, employment, earnings, and other measures of job quality and family well-being. The study also analyzes the costs of VIDA.

Executive Summary

The **Valley Initiative for Development and Advancement (VIDA)** program was implemented to link unemployed and other low-income adults in the Lower Grande Valley of Texas to local middle-skills jobs. The program supports training primarily at local colleges to help participants obtain certificates and degrees that are expected to lead to jobs that pay well and have strong local employer demand for workers.

VIDA is part of the **Pathways for Advancing Careers and Education (PACE)** project. Funded by the Administration for Children and Families within the U.S. Department of Health and Human Services, PACE is a multi-site experimental evaluation of nine programs that incorporate some features of a career pathways framework.

This evaluation, the Career Pathways Intermediate Outcomes Study, analyzes VIDA's impacts on educational attainment, employment and earnings, and other life outcomes three years (and for some outcomes longer) following random assignment. It extends analyses conducted for an initial report (Rolston et al. 2017) that covered implementation and short-term impacts on education and early career progress. Future reports produced by the Career Pathways Longterm Outcomes Study will extend the follow-up period further.

VIDA

Established in 1995, VIDA is a nonprofit, community-based organization created through a partnership of faith-based leaders and the business community of the Lower Rio Grande Valley, Texas. The major VIDA program components:

- Required full-time enrollment in certificate programs, associate degree programs, or the final two years of bachelor's degree programs to enable faster progress and reduce the time for other life events to interfere with completion.
- Weekly mandatory group and individual counseling sessions to identify and address barriers early and to provide workshops on topics to help participants succeed in school (e.g., study skills) and in the labor market (e.g., resume writing).
- Financial support—after accounting for eligibility for other financial support such as Pell grants—for tuition, books, and other needs to reduce financial barriers to completion.
- A 16-week, accelerated, full-time basic skills ("bridge") program, the "College Prep Academy," for those who are not college ready designed to prepare them to pass college entrance exams.
- Regular assessment of local labor markets including consulting with local economic development corporations to learn about current and anticipated local labor needs to identify occupations where support for training from VIDA will prepare participants for employment opportunities.

VIDA's program components—made up of incentives and requirements—are designed to complement one another. On the one hand, VIDA has a demanding set of requirements: full-

time enrollment in school, achievement of passing grades, and participation in weekly counseling sessions. On the other hand, VIDA provides a high level of support to help participants meet these requirements.

The VIDA Evaluation

The study uses a randomized experiment to estimate the impact of access to VIDA on its participants' education, employment, and earnings outcomes. The research team designed the experiment to capture the effects of the program overall, rather than its individual components. A total of 958 applicants who applied between November 2011 and June 2014 participated in the study—478 were randomly assigned to the treatment group and offered access to VIDA, and 480 were randomly assigned to the control group and were not offered access to VIDA but could access similar training and services in the community on their own.

This impact study used data from a follow-up survey conducted three years after random assignment, four years of education records from VIDA's partner colleges, and four years of earnings records from the National Directory of New Hires. Some analyses in this report extend to five years of education and earnings records for a cohort of early study enrollees that represent 80 percent of the full sample. The analysis estimates impacts for each outcome by calculating the difference between average values in the treatment group and the control group, after controlling for baseline characteristics. The study also analyzes the costs of VIDA.

Key Findings

This report focuses on the impact of VIDA on postsecondary education and training, employment, earnings, and other measures of job quality and economic well-being.

Impacts on Postsecondary Education and Training

VIDA had a positive impact on college credentials and enrollment after three years, including the confirmatory education outcome: *receipt of a college credential requiring a year or more of study to earn*.

VIDA had a 9 percentage point impact on receipt of credentials requiring a year or more of college.

After three years, 61 percent of those in the treatment group and 52 percent of those in the control group had earned such a college credential (Exhibit ES-1). This 9 percentage point increase in receipt represents an 18 percent increase over the control group.

VIDA also had a positive impact on receipt of other types of credentials (Exhibit ES-1). By the end of the third year, VIDA increased receipt of an associate degree or higher by 7 percentage points (41 percent in the treatment group versus 34 percent in the control group) and receipt of any college credential by 13 percentage points (67 percent versus 54 percent).

VIDA's impact on each of these credentials persisted into the fourth year; for the 80 percent of sample members who enrolled in June 2013 or earlier ("the early cohort") who had five years of available, impacts persisted into the fifth year (see Exhibit 3-1 of the full report).



Exhibit ES-1: Impacts on Credential Receipt after Three Years

Source: VIDA partner college records.

Note: "Received 1+ year college credential" is the confirmatory outcome in the education domain. Both other credential measures are secondary outcomes. For confirmatory and secondary outcomes, statistical significance is based on one-tailed tests. Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

■ VIDA had positive impacts on college enrollment that extended beyond the time its participants were receiving VIDA services.

VIDA increased full-time-equivalent (FTE) enrollment throughout the four-year follow-up period. FTE enrollment is a useful tool for assessing the program's effect on college-going, because it captures all enrollment, full-time or part-time, and appropriately weights each to reflect the total share of time in school. VIDA increased FTE enrollment by 2.2 months after three years (13.5 months for the treatment group versus 11.3 months for the control group) and 2.8 months after four years (15.0 months versus 12.2 months). The additional enrollment caused by VIDA also resulted in impacts on credits earned. Treatment group members earned an additional 6.4 credits by the end of Year 3 and 8.0 credits by the end of Year 4, which are approximately equivalent to one half to two thirds of a full-time semester (defined as 12 or more credits).

Longitudinal examination of treatment and control group college enrollment in six-month periods after random assignment provides another perspective on VIDA's ongoing positive educational impacts. VIDA's impacts on any college enrollment—that is, whether a participant enrolled at all (part-time or full-time) in each six-month period—are 10 percentage points (28 percent for the treatment group versus 18 percent for the control group) in the beginning of the fourth year (months 37-42) and 8 percentage points (23 percent versus 15 percent) at the end of the fourth year (months 43-48) (Exhibit ES-2).



Exhibit ES-2: Levels of and Impacts on College Enrollment

Source: VIDA partner college records.

Note: Enrollments in six-month time periods are exploratory outcomes and statistical significance is based on two-tailed tests. Sample size is 478 in the treatment group and 480 in the control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

The continued impacts on any enrollment in the fourth year occur even though the great majority of treatment group members were no longer participating in VIDA during that time. According to VIDA program data, only 15 percent of participants were still receiving services at the beginning of the fourth year and that fraction drops to 6 percent by the end of the year.

These impacts are similar to the largest impacts in periods during which most treatment group members were participating in VIDA (months 7-18). The actual levels of enrollment relative to VIDA participation are also notable—for example, in months 37-42, about one quarter (28 percent) of treatment group members were enrolled in college, even though only about 15 percent were still in the VIDA program at the start of that period. These later enrollment impacts are consistent with the treatment group accumulating more credentials and credits than the control group over the Year 3 and Year 4 periods, as mentioned earlier.

Impacts on Earnings and Employment

VIDA did not have an impact on earnings or employment during the follow-up period, based on the National Directory of New Hires wage records. There was little evidence of impacts on other economic outcomes, based on the three-year follow-up survey.

■ VIDA had no detectable impact on average quarterly earnings in follow-up quarters 12 to 13.

Average earnings in quarters 12-13 (the confirmatory outcome in this domain) for the treatment group were no different than for the control group. As is true with all estimates, the impact was estimated with uncertainty. When we incorporate that uncertainty into a range of plausible impacts, we estimate that the true impact on quarterly earnings could be as positive as +\$238 or as negative as -\$920 in quarters 12-13. Most of this range is either negative or not sufficiently larger than zero to be meaningful. In addition, there were no positive impacts on total earnings or employment over all four years of follow-up.

As of quarters 12-13, the treatment and control groups' average quarterly earnings surpassed \$6,000 (up from approximately \$1,200 in the quarter of random assignment). Exhibit ES-3 shows the trend in earnings by quarter from before random assignment to follow-up quarter 16. Following random assignment, average quarterly earnings begin to grow rapidly for the treatment and control groups, rising from roughly \$1,200 per quarter at baseline to approximately \$7,000 per quarter in quarter 16. After an initial period of several quarters of negative earnings impacts, there were no further detectable positive or negative earnings impacts. Earnings for the treatment group were statistically significantly lower than for the control group in quarters 2, 3, 4, and 6, which approximately correspond to the first year and a half after random assignment. The negative impacts likely reflect wages foregone by the treatment group while they were enrolled in training full-time at higher levels than control group. After quarter 6, there were no detectable impacts through four years out.

■ VIDA did not increase overall employment.

As expected by the career pathways theory of change as applied to VIDA, a smaller proportion of the treatment group worked than did the control group in a period of high levels of active participation in VIDA, but not afterwards. For each of quarters 3-6, there were negative impacts on the treatment group's employment rate, ranging from 6 to 10 percentage points. For example, in quarter 4, 48 percent of the treatment group was employed compared to 57 percent of the control group. In all other quarters, the study found no detectable impacts on employment, including quarter 16 during which 79 percent of the treatment group and 78 percent of the control group were employed.



Exhibit ES-3: Impact on Average Earnings in Follow-up Quarters

Source: National Directory of New Hires.

Note: Earnings estimates within each quarter are exploratory outcomes and statistical significance is based on two-tailed tests. Sample size is 478 in the treatment group and 480 in the control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

■ VIDA increased employment in jobs requiring at least mid-level skills but had no detectable impact on the two other key measures of career-track employment.

Examination of survey measures of career pathways employment three years after random assignment found mixed results. VIDA increased the proportion of treatment group members *working in jobs requiring at least mid-level skills*—a measure that reflects the program's goal of improving a participant's job skills. The increase was almost 6 percentage points: 44 percent of the treatment group versus 39 percent of the control group reported working in a mid-level skills job. This impact did not translate into an increase in participants' hourly wages, which was an assumption in the career pathways theory of change as applied to VIDA.

To examine hourly wages, the evaluation compared the proportions of all treatment and control group members who earned at the level of the 60th percentile of the wage distribution for employed control group members, which for VIDA was \$17.50 or more per hour. Less than one third of either the treatment or control group were employed in jobs paying at least \$17.50 per hour.

The evaluation also conducted exploratory analyses of indicators of job quality, such as working at least 32 hours per week, working in a job that offers health insurance, and working in a job with a supportive environment. No impacts on these job quality indicators were detected.

Impacts on Other Life Outcomes

The career pathways theory of change as applied to VIDA hypothesizes that positive impacts on postsecondary education outcomes would lead to favorable impacts on earnings, which would translate into improvements in other life outcomes. Not surprisingly, given the absence of VIDA's impact on overall employment or earnings, the study detected few signs of impacts on economic well-being at three years after randomization, but VIDA's impact on education outcomes may have contributed to an impact on childbearing and living arrangements.

Except for the amount of student debt, VIDA had no positive detectable impact on other important measures of family economic well-being.

VIDA reduced participants' student debt by slightly more than \$1,100, or \$3,312 in the treatment group compared to \$4,416 in the control group. This is consistent with the prominent role of enhanced financial support in the career pathways theory of change as applied to VIDA and the roughly \$7,400 per treatment group member the program provided in financial assistance (which includes both tuition and fee assistance and other financial assistance for books, school-related transportation and childcare, and some living expenses).

Although it reduced treatment group members' student debt, VIDA had no detectable impact on other forms of debt, indicators of financial distress, or receipt of means-tested public benefits. Finally, there was no detectable impact on treatment group members' having health insurance coverage. About three fifths of both the treatment and control group had health insurance at the time of the follow-up survey.

■ For women, VIDA decreased the likelihood of childbearing or living with a spouse or partner in the three-year follow-up period.

Three years after random assignment, 22 percent of women in the treatment group versus 31 percent of women in the control group (a 9 percentage point decrease) had a child since study enrollment or were pregnant at the time of the survey.¹ This impact appears to have been driven by women having fewer first children: in the same period, women in the treatment group were 11 percentage points more likely than women in the control group to have no children in the household (37.6 percent versus 26.2 percent).

After three years, women in the treatment group were also less likely to be living with a spouse or partner (46 percent versus 55 percent). This phenomenon was primarily driven by non-formation, rather than break-up of existing relationships. In addition, by estimating the impact on living arrangements by gender, we found that the overall decrease was driven entirely by treatment group women, who were 14 percentage points less likely than control group women to be living with a spouse or partner.

Because it is plausible that larger positive impacts on enrollment for women could lead to these reductions in childbearing or living with a spouse or partner, the evaluation examined impacts on enrollment by gender. Positive impacts on enrollment were larger for women than men in

¹ The survey did not ask men whether they had become a parent.

Year 3, suggesting that treatment group women may have chosen to invest in their education, possibly inducing a delay in childbearing and marriage/partnering.

Findings from the Cost Analysis

VIDA provided an extensive array of services and financial support to help participants persist and complete their targeted credential. In our cost analysis, we estimate that the VIDA program spent \$11,070 per treatment group member providing services and financial assistance over the four years following random assignment. Almost half of the cost was direct payments to colleges and universities for tuition and fees (\$5,252) while the remaining costs were for program services (\$2,799) and financial assistance for books, transportation, and living expenses (\$2,169). After adding in costs of postsecondary education and training not paid for by VIDA and subtracting comparable control group costs, the total cost to society was \$6,713 per treatment group member.

Discussion of Findings

VIDA had an impact on multiple education outcomes (i.e., enrollment, credits, and credentials) three years after random assignment, which the theory of change expected to be associated with subsequent impacts on earnings. However, after four years (five years for the early cohort), there is no detectable impact of VIDA on earnings. The lack of earnings impact raises two questions:

- Why were there no positive earnings impacts by the fourth year, despite positive impacts on credentials expected to have value in the labor market?
- What are the prospects for earnings impacts with longer follow-up?

One possibility for the lack of earnings impacts is that VIDA's impact of 9 percentage points on receipt of credentials requiring a year or more of college may not be large enough to induce a detectable increase in average earnings for the full sample. However, this impact is comparable to, and not statistically significantly different from, the impact of Project QUEST (hereafter ""QUEST"), a non-PACE program that did have impacts on earnings operating the same model as VIDA.² QUEST had a 13 percentage point impact on receipt of college credentials requiring a year or more of college by the end of the fourth year after study enrollment; and in that year, QUEST had an earnings impact of more than \$1,000 per quarter. So the level of VIDA's impacts on credentials appears to be sufficient to produce an impact for a similar program. Though VIDA had a significantly positive impact on college enrollment in the fourth year of 10 percentage points and QUEST had a non-significant positive estimate of 3 percentage points, the difference between the two programs' impacts was not statistically significant.

² Project QUEST operates in San Antonio, Texas, and began in 1992. VIDA, purposely following QUEST, adopted the same model in 1995. In addition, the model operates in seven other localities, most of which are also in Texas. Because, like VIDA, all of these programs also intentionally followed the model used by Project QUEST, it is often referred to as "the QUEST model." In addition, there is some variation in implementation of the model due to adaptation to local circumstances.

There are several possible explanations for the difference in impact across these otherwise similar programs: the VIDA and QUEST evaluations were conducted at different times and in different cities and thus have different labor markets and different alternative training opportunities available to control group members. In addition, the QUEST sample was drawn from adults not currently enrolled in college, whereas the majority of the VIDA sample was already enrolled. The effectiveness of the services provided by the programs may also have been different, and local variation in implementation of the model may play a role in different results, including a more substantial emphasis on job placement in QUEST.

Whether VIDA will have earnings impacts over the longer term could depend on how long positive impacts on enrollment continue and the extent to which credential impacts grow as a result of the enrollment impacts. Years 3 and 4 may be too early to detect an earnings impact, in light of VIDA's enrollment impacts continuing beyond the period when its participants were receiving services, likely suppressing treatment group earnings. In Year 4, VIDA had an 8 percentage point enrollment impact (23 percent for the treatment group versus 15 percent for the control group). The extended enrollment impact may result in the credential impact continuing to grow. If the credential impact does grow (more VIDA participants earn degrees and certificates) and the enrollment impact fades (fewer VIDA participants are still in school rather than working), the earnings of treatment group members would be expected to grow relative to the control group for two reasons: the impact of the credentials on earnings and the reduction in forgone earnings from enrollment.

Looking Ahead

As part of the PACE project, the research team will produce a longer-term VIDA report based on up to three more years of follow-up. That six-year report will use longer-term administrative data on college enrollment, credential receipt, and earnings as well as data from a six-year participant follow-up survey. In addition, subject to availability of funding, a ten-year, administrative data-only report is planned. The career pathways theory of change as applied to VIDA and the findings in this three-year report raise important questions. Most critically, will VIDA's impacts on education outcomes shrink, persist, or grow and will their magnitude be large enough to lead to future positive impacts on earnings and employment?

1. Introduction

As the U.S. economy has changed in recent decades, so too has the nature of the jobs available and the education and training required to enter them. A high school diploma is no longer enough to enter most well-paying jobs (Pew Research Center 2016). Well-paying jobs require a higher level of education, though not necessarily a bachelor's degree (Georgetown University Center on Education and the Workforce 2018).

Disadvantaged adults face structural and personal barriers to enrolling in and completing postsecondary education and training and moving into middle-skills jobs and the higher earnings and benefits that come with them. Many need to work to support themselves and their families, which leaves little time and money to put toward schooling (Pew Research Center 2016). Further, navigating the postsecondary educational system and the academic demands of higher education may be unfamiliar to disadvantaged adults and pose challenges to persistence and completion (Holzer and Baum 2017).

The **Valley Initiative for Development and Advancement (VIDA)** program in the Lower Rio Grande Valley in Texas is designed to address these barriers to entering and completing postsecondary education. VIDA provides financial and personal support to low-income students so they can complete college-level occupational programs that prepare them for well-paying jobs in demand in the region.

Abt Associates is evaluating VIDA as part of the **Pathways for Advancing Careers and Education (PACE)** project. Short-term reports for VIDA and the other eight programs in PACE reported on program implementation and impacts at approximately 18 months after randomization.³ This study, the Career Pathways Intermediate Outcomes study, extends the follow-up period to three years for programs in the PACE study. Future reports produced by the Career Pathways Long-term Outcomes Study will extend the follow-up period further.

All nine programs include some features of the overarching career pathways framework (Fein 2012). This framework posits that postsecondary education and training should be organized as a series of manageable steps leading to successively higher credentials and employment opportunities in growing occupations. To effectively engage, retain, and facilitate learning of a diverse population, career pathways programs integrate four program components:

- (1) **Academic and non-academic assessment** to identify student needs and factors that may facilitate or hinder academic success so advisors can make appropriate placements and referrals;
- (2) **Innovative basic skills and occupational skills instruction** to make education and training more manageable for non-traditional students, who are likely to be balancing school

Abt Associates

³ PACE-related documents, including profiles and implementation and short-term impact reports for each program, can be found at: <u>https://www.acf.hhs.gov/opre/project/pathways-advancing-careers-and-education-pace-2007-2018</u> and <u>www.career-pathways.org</u>.

and work (e.g., accelerated courses) and who may have low levels of basic skills (e.g., contextualization);

- (3) Academic and non-academic supports (e.g., academic advising, tutoring, financial support, and referrals to support services) to help students succeed in their current academic step and to proceed to and complete subsequent steps; and
- (4) Strategies to connect participants and employers during the program, such as internships, or post program, such as employment workshops.

Because the nine programs vary in their target populations, mix of components, and occupational fields, PACE is evaluating each program separately. This report documents the impact of VIDA on postsecondary training, earnings, employment, and other life outcomes of students through approximately three years after they agreed to participate in an evaluation of the program. A short-term report, also

Programs in PACE

- Bridge to Employment in the Healthcare Industry, San Diego Workforce Partnership, County of San Diego, CA*
- **Carreras en Salud**, Instituto del Progreso Latino, Chicago, IL[^]
- Health Careers for All, Workforce Development Council of Seattle-King County, Seattle, WA*
- Integrated Basic Education and Skills Training (I-BEST) program at three colleges (Bellingham Technical College, Everett Community College, and Whatcom Community College), Washington State
- **Pathways to Healthcare**, Pima Community College, Tucson, AZ*
- Patient Care Pathway Program, Madison College, Madison, WI
- Valley Initiative for Development and Advancement (VIDA), Lower Rio Grande Valley, TX
- Workforce Training Academy Connect, Des Moines Area Community College, Des Moines, IA
- **Year Up**, Atlanta, Bay Area, Boston, Chicago, National Capital Region, New York City, Providence, and Greater Seattle

*Programs funded through the Health Profession Opportunity Grants (HPOG) Program.

^Program partially HPOG funded.

produced by Abt Associates, shared findings on implementation and short-term impacts on education, employment, and related outcomes (Rolston et al. 2017).⁴

The remainder of this chapter describes VIDA's key components and context (Section 1.1). It then summarizes findings from the short-term report (Section 1.2). Finally, it provides a roadmap to the remainder of this three-year report (Section 1.3).

1.1 The VIDA Program

Established in 1995, VIDA is a nonprofit, community-based organization created through a partnership of faith-based leaders and the business community of the Lower Rio Grande Valley in Texas. VIDA supports full-time enrollment of adults in occupational training programs at local

⁴ The average completion of the participant follow-up survey for the VIDA short-term report occurred about 20 months after random assignment. College records data were available for the full VIDA sample for 24 months.

colleges by providing substantial financial assistance for tuition and other direct costs of attending school (but not stipends to cover basic living expenses) and required weekly counseling sessions. The occupational programs result in certificates and degrees that are expected to lead to jobs that pay well and have strong local employer demand for workers.

The major VIDA program components are:

- **Required full-time enrollment** in certificate programs, associate degree programs, or the final two years of bachelor's degree programs.⁵ VIDA requires full-time enrollment because it enables students to progress toward their targeted credential and a higher-paying job more quickly than part-time enrollment, and this faster progress motivates students to continue their program and reduces the time for other life events to interfere with completion.
- Weekly mandatory group and individual counseling sessions. These sessions are designed to help participants navigate and succeed in college and employment by identifying and addressing problems early, offering social support through staff and peer interactions, and providing workshops on topics to help participants succeed in school (e.g., study skills) and in the labor market (e.g., resume writing). VIDA counselors conduct the sessions at students' colleges to make it easier for them to attend.
- Financial support for tuition, books, and other needs. VIDA carefully calculates the amount of financial support it will provide each participant based on the full cost of attendance, taking into consideration eligibility for other financial support such as Pell grants, the household's income and living expenses, the type of program into which the participant is enrolled or enrolling, and the length of time it expects the student to participate in the program. A significant share of VIDA's financial support goes toward tuition and course-required materials. As a result of VIDA funding tuition and fees, students can use any remaining Pell grant funds for which they are eligible for other costs of school and living expenses. Transportation assistance is also available from VIDA to offset the costs of attending class.
- **The "College Prep Academy."** The academy is a 16-week, accelerated, full-time basic skills ("bridge") program for those who are not college ready, but who have 10th-grade skills levels or higher. Offered through a partnership with the local colleges, the course meets daily to prepare participants to pass required college entrance exams.
- **Regular assessment of local labor markets.** VIDA identifies occupations where support for training from VIDA is most likely to result in employment. One way VIDA

⁵ VIDA funds the last two years of a bachelor's degree because its founding leaders learned from universities that finances became difficult for students in their final years of a four-year program; VIDA theorized that tuition and other financial assistance provided then could help students complete coursework and obtain a degree. In addition to support for longer-term programs, VIDA sometimes supports shorter-term training outside of the colleges in cases where the applicant has immediate financial need and can be trained for a good-paying job such as Commercial Drivers Licensing Truck Driver.

does this is by consulting with local economic development corporations to learn about current and anticipated labor needs among businesses in the area.

From the perspective of the career pathways framework, VIDA's largest resource investments are in the academic and non-academic supports provided through its weekly counseling sessions and its generous financial support to enable full-time college attendance. Except for the College Prep Academy, VIDA primarily relies on existing occupational college courses. The program's main connection to employers is through its regular monitoring of local labor markets to ensure that the programs it supports are in high-demand occupations.

VIDA's program components—made up of incentives and requirements—are designed to complement one another. On the one hand, VIDA has a demanding set of requirements: full-time enrollment in school, achievement of passing grades, and participation in weekly counseling sessions. On the other hand, VIDA provides a high level of support to help participants meet these requirements. Financial support, particularly with tuition, is intended to minimize participants' need to work so they can focus on school. Personal support provided through counseling sessions is designed to help participants address academic and personal challenges that otherwise might derail their participation in training.

1.1.1 Eligibility and Enrollment

To recruit potential applicants, VIDA extensively marketed its program through media, partners, and word-of-mouth referrals. Partner colleges often referred current students who needed financial assistance to remain enrolled in school. For the evaluation, VIDA held weekly group sessions where eligibility determination, application submission, and random assignment took place. Typically lasting most of the day, these sessions rotated among various cities and towns across the four-county region.⁶ To be eligible for the program, applicants had to:

- Reside in the Lower Rio Grande Valley;
- Be unemployed, underemployed, meet federal poverty income levels, or be on public assistance;
- Be 18 years or older;
- Be eligible to work in the United States; and
- Be either college ready (as indicated by a high school diploma or GED, college transcripts, or college entrance exam scores) to qualify for regular college classes or at the 10th-grade level or higher (demonstrated through a math, reading, and writing assessment) to qualify for the College Prep Academy.

Through one-on-one conversations with each applicant, VIDA staff also assessed the applicant's suitability for the program. Applicants had to be interested in one of the programs of study supported by VIDA and the types of jobs associated with those programs. Staff identified

⁶ Prior to PACE, VIDA used a longer and more complex application process. Because of higher recruitment volume during PACE, the program redesigned the process to reduce the burden on both staff and applicants. Because of its greater efficiency, VIDA staff retained the redesigned process after PACE recruitment was completed.

potential barriers to applicants' ability to commit to full-time participation in coursework and VIDA services. Applicants deemed eligible for the program signed a form consenting to participate in the study and completed two study forms (the Basic Information Form and the Self-Administered Questionnaire).

At the conclusion of the session, VIDA staff randomly assigned eligible applicants. Between November 2011 and June 2014, 958 study participants were randomly assigned: 478 to the treatment group and 480 to the control group. Treatment group members could participate in VIDA; control group members could not.⁷

Control group members could participate in other training available in the community, including programs available at VIDA's partner colleges where treatment group members also enrolled. The key treatment-control group differences were VIDA's substantial financial assistance and weekly counseling sessions. Treatment group members at the grade 10-12 levels in basic skills also had access to the accelerated College Prep Academy not available to control group members.

1.1.2 Characteristics of the Study Sample

Exhibit 1-1 shows the study sample's characteristics at baseline, both overall and for the treatment and control groups separately. The *p*-values in the right-most column indicate that the evaluation's random assignment procedure produced treatment and control groups with two detectable differences in these characteristics (baseline measures of current education and current work hours per week).⁸

Exhibit 1-1 also shows that the VIDA study sample closely reflects the program's eligibility criteria. At application, sample members had low incomes; approximately half had annual household incomes of less than \$15,000, and more than 85 percent had incomes of less than \$30,000 at the time they enrolled into the study. About two thirds received benefits from the Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

Most study participants were not working or were working less than full-time at the time of random assignment. About two thirds of the sample reported experiencing financial hardship in the year preceding random assignment.⁹

As a requirement of the study, control group members could not participate in VIDA for a two-year period from their date of random assignment. After two years, they could apply again to VIDA and enroll if they met VIDA's eligibility criteria at that time.

⁸ Given the number of tests, the number of statistical differences (2 of 11) is about what we would expect by chance.

⁹ Financial hardship is defined as ever missed rent/mortgage payment in prior 12 months or reported generally not having enough money left at the end of the month to make ends meet over the last 12 months.

Characteristic	All Study	Treatment	Control	n Value
	Participants	Group	Group	p-value
	4.4.4	10.0	15.0	.222
20 or younger	14.1	12.3	15.8	
21 to 24	22.9	24.3	21.5	
25 to 34	40.6	39.3	41.9	
35 or older	22.4	24.1	20.8	
Gender (%)				.410
Female	70.9	69.7	72.1	
Male	29.1	30.3	27.9	
Race/Ethnicity (%)				.235
Hispanic, any race	95.8	95.6	96.0	
Black, non-Hispanic	0.9	0.4	1.3	
White, non-Hispanic	3.0	3.6	2.4	
Another race, non-Hispanic	0.1	0.2	0.0	
Current Education (%)				.038
Less than a high school diploma	0.7	0.2	1.3	
High school diploma or equivalent	26.1	23.0	29.2	
Less than 1 year of college	15.8	17.0	14.6	
One or more years of college	52.7	55.7	49.7	
Associate degree or higher	4.7	4.2	5.3	
Family Income in Past 12 Months (%)				.238
Less than \$15,000	50.9	49.6	52.3	
\$15,000 to \$29,999	36.5	39.0	34.0	
\$30,000 or more	12.6	11.5	13.8	
Mean (\$)	\$16,376	\$16,277	\$16,474	.813
Public Assistance / Hardship in Past 12 Months (%)				
Received WIC or SNAP	67.6	66.5	68.8	.442
Received public assistance or welfare	5.5	6.0	5.0	.501
Reported financial hardship ^a	67.2	66.5	67.9	.630
Current Work Hours Per Week (%)				.017
0	64.9	62.8	67.0	
1 to 19	11.8	10.9	12.8	
20 to 34	14.8	18.4	11.1	
35 or more	8.5	7.9	9.1	
Expected Work Hours Per Week in Next Few Months (%)		-	-	.321
	55.3	53.7	56.8	
1 to 19	12.6	11.5	13.6	
20 to 34	21.0	23.3	18.8	
35 or more	11.2	11.5	10.8	
Sample size	958	478	480	

Exhibit 1-1: Selected Characteristics of the VIDA Study Sample at Baseline

Key: SNAP = Supplemental Nutrition Assistance Program. WIC = Special Supplemental Nutrition Program for Women, Infants, and Children. *Source:* PACE Basic Information Form.

^a *Financial hardship* is defined as ever missed rent/mortgage payment in prior 12 months or reported generally not having enough money left at the end of the month to make ends meet over the last 12 months.

Note: There are two statistically significant differences at the *p*=.10 level (Current Education, Current Work Hours per Week). Given the number of tests, the number of statistical differences (2 of 11) is about what we would expect by chance. Some percentages for characteristics do not add up to 100 percent due to rounding. Public Assistance/Hardship in Past 12 Months does not add to 100 percent because the categories are neither mutually exclusive nor exhaustive. See Appendix A in the appendix volume for more details on baseline characteristics.

The great majority of sample members had attended college before enrolling in VIDA, including more? than half who had a year or more of college. As noted above, local colleges often referred current students to VIDA. Virtually all study participants had at least a high school diploma or equivalent.

Study participants were older than traditional college students: more than 60 percent were age 25 and older, and more than one fifth were age 35 or older. The majority of study participants (about 70 percent) were female. Almost all identified as Hispanic (96 percent), reflecting the population of the Lower Rio Grande Valley, which is about 90 percent Hispanic.

1.1.3 Local Context

VIDA serves a four-county region in the Lower Rio Grande Valley of Texas. Cameron, Hidalgo, Starr, and Willacy Counties together are 43,000 square miles and had a combined population of 1.3 million in 2014. The two major cities in the region are Brownsville (in Cameron County) and McAllen (in Hidalgo County). During the PACE project, VIDA's headquarters were in Weslaco, also in Hidalgo County. For the purposes of describing the population and economic environment, we use Hidalgo County as a reference point, since it is the largest of the four counties.¹⁰

In 2014, the population in all four counties was of predominantly Hispanic or Latino ethnicity (91 percent in Hidalgo County). Among those who were not Hispanic or Latino, the largest share identified as White (7 percent). Compared with the United States as a whole, the population in the Lower Rio Grande Valley had lower household incomes and a greater proportion lived below the federal poverty level. The median household income nationally was \$53,000 in 2014, whereas the median income in Hidalgo County was \$35,000. About 16 percent of the U.S. population lived below the federal poverty level in 2014, compared with more than one third of the population in each of the four counties VIDA serves.¹¹

The local economic climate improved over the study period. When study enrollment began in 2011, the unemployment rate in Hidalgo County was 12 percent; when PACE enrollment concluded in 2014, the unemployment rate had declined to 9 percent. In 2017, the end of the observation period for most of the outcomes covered in this three-year report, the unemployment rate had declined further still to 8 percent. Despite these improvements, the unemployment rate in the region was still twice as high as the national rate of 4 percent in 2017.¹²

Data from the U.S. Bureau of Labor Statistics (2018) show that in May 2017, healthcare occupations for practitioners, technicians, and support workers, in which 75 percent of VIDA

¹⁰ Cameron and Hidalgo Counties were more populous (415,000 and 806,000, respectively) than Starr (62,000) and Willacy (22,000). The two larger counties—Cameron and Hidalgo—were similar in terms of household income and unemployment, but the two smaller counties had lower household income and higher unemployment. See Exhibit 3-1 in VIDA short-term report for more detail on each of the four counties (Rolston et al. 2017).

¹¹ U.S. Census Bureau. 2014. American Community Survey 2010–2014. <u>http://factfinder.census.gov/</u>.

¹² U.S. Bureau of Labor Statistics, "Local Area Unemployment Statistics," <u>www.bls.gov/lau/#tables</u>.

participants trained, accounted for almost 13 percent of total employment in the region. In interviews conducted for the implementation study, economic development corporation staff emphasized the importance of the healthcare sector in the local economy and the demand for skilled workers in this field. There are many hospitals and outpatient care providers in the region. VIDA staff and board members said that in the past, healthcare providers had to recruit talent from outside the region, but that the local colleges and universities were now training local residents for those jobs.

1.2 Earlier Findings on VIDA from PACE

The earlier VIDA *Implementation and Early Impact Report* (Rolston et al. 2017) provides useful context for the current report. The **implementation study** examined the design and operations of VIDA and analyzed participation patterns of treatment group members in training and other activities. The **short-term impact study** measured the VIDA's effects on training, credentials, and self-reported employment and career progress at 20 to 24 months after random assignment. This section summarizes key findings from that report.

1.2.1 Earlier Results from the VIDA Implementation Study

Section 1.1 described the key components of the VIDA program. This section summarizes program implementation and participants' experiences in the program through 24 months after random assignment.

Almost all participants received financial assistance from VIDA.

According to VIDA administrative records, in the 24 months after random assignment, VIDA provided financial assistance to 98 percent of treatment group members. Of them, VIDA spent an average of \$6,808 per participant. Of the participants who received financial assistance, almost all (99 percent) received assistance with tuition and related expenses of attending and completing training, which averaged \$4,861 per participant. Other common types of financial assistance included paying for books (89 percent) and transportation going to and from school (88 percent).¹³

Mandatory individual and group counseling services were an important VIDA service.

Qualitative information from program observations by the PACE research team and site-visit interviews with staff and participants suggests that treatment group members received a substantial dose of individual and group counseling. VIDA staff describe the program as a set of generous incentives and participant requirements that interact to sustain students to completion of credentials. Qualitative interviews with participants aligned with this description.

¹³ Updates for this report show that four years after random assignment, 99 percent of all treatment group members received some amount of financial assistance. Across all forms of financial assistance, VIDA provided an average of \$7,400 per treatment group member. Tuition and related fees constituted 71 percent of this assistance, followed by 12 percent for books and 11 percent for transportation to and from school.

Nearly all treatment group members participated in occupational training; the vast majority completed college credits, including a substantial number who accumulated 30 or more credits.

Almost all treatment group members (98 percent) participated in some education or training activity, which included both basic skills education in the College Prep Academy and occupational training. Ninety-seven (97) percent of all treatment group members participated in occupational training, including those who advanced from the College Prep Academy into college-level programs of study. Ninety-one (91) percent of treatment group members earned at least one college credit, and 66 percent completed 30 or more college credits (by some standards the equivalent of a year of full-time college). Two years after random assignment and enrollment into VIDA's program, 42 percent of the treatment group was still attending training.

Among treatment group members, the most commonly attended courses of training were nursing and allied health professions, followed by programs in education, social services, and specialized trades.

Of treatment group members who engaged in occupational training, three quarters participated in nursing or allied health training, according to VIDA administrative records. Half of those enrolled in healthcare training pursued nursing programs, including Licensed Vocational Nurse (LVN) certificate programs, Associate Degree in Nursing (ADN) programs, and an LVN to ADN pathway program.¹⁴ Other health programs included certificate and associate degree programs for Radiology Technician, Respiratory Therapist, and Health Information Technology. Other common programs attended by VIDA participants were in education and social services; specialized trades (e.g., Heating/Ventilation/Air Conditioning, Refrigeration Technician, and Automotive Technician); business (e.g., Office Management, Accounting); and technology.

1.2.2 Earlier Results from the Impact Study

For the short-term impact report, the PACE research team designated the education measure *number of college credits* as the sole confirmatory indicator of VIDA's success. The short-term analyses also assessed a variety of other education outcomes, as well as several employment-related outcomes believed to provide an early indication of expected longer-term education, employment, and earnings impacts. The primary source of data for the education outcomes was 24 months of college records from the four colleges and universities that served the VIDA region. The source for other outcomes was a participant follow-up survey completed on average 20 months after random assignment.

The program increased the total number of college credits earned by about six credits (the confirmatory outcome).

Over a 24-month period, treatment group members earned 33 credits, compared with 27 credits for the control group. The relatively large number of credits for control group members reflects

¹⁴ In addition to the two nursing programs that result in degrees, the LVN program is a one-year certificate program. VIDA would support a standalone Certified Nursing Assistant (CNA) certificate only in exceptional circumstances, although some VIDA participants earned a CNA as part of their LVN program.

that they had access to the same college courses as treatment group members and that applicants for VIDA's services were often already enrolled when they applied.

The program increased rates of full-time college enrollment and college credentials earned.

VIDA increased full-time enrollment in college—an outcome that is central to the career pathways theory of change (as detailed in Chapter 2). Full-time enrollment increased by between 5 and 11 percentage points in each six-month period during the 24 months following random assignment, and by 11 percentage points over the full 24-month period. About three quarters of treatment group members were enrolled full-time at some point.

VIDA increased the percentage of participants who earned a college credential by 8 percentage points: 53 percent of treatment group members earned a credential, compared to 45 percent of control group members. Impacts were largest for those who received an educational certificate, such as an LVN college credential, about 5 percentage points. There was also a positive effect on those who received academic degrees (about 4 percentage points), and this effect was almost entirely due to receipt of associate degrees. VIDA did not affect receipt of non-college degrees or exam-based certifications and licenses.

The study detected few statistically significant impacts in more distal outcome domains, such as psycho-social skills or life stressors, with the exception of women's childbearing.

VIDA substantially lowered childbearing among women responding to the short-term follow-up survey. VIDA had a 10 percentage point reduction (or 46 percent reduction relative to the control group) on women having a child or being pregnant at the time of the survey.

1.3 Guide to the Rest of the Report

This report has eight chapters. **Chapter 2 summarizes the VIDA study design and analytic methods**, including a discussion of the career pathways theory of change and its implied research questions. The chapter also documents how the study implemented random assignment and describes its principal data sources.

Chapter 3 presents the impact study findings on postsecondary education and training. Based on the career pathways theory of change as applied to VIDA, the expectation of the PACE research team was that if the program was to achieve its goals, then by the short-term follow-up there would be meaningful positive impacts on college credits received since study enrollment. As noted above, at 24 months after random assignment, VIDA had increased the total number of college credits earned as well as rates of full-time college enrollment and receipt of any college credentials. Now, in this three-year report, we analyze whether those early gains in enrollments, credits, and credentials increase, decrease, or stay about the same and whether there has been any impact on credentials requiring longer college enrollment. This includes impacts at four years after random assignment for the full sample and at five years for a partial sample. For this impact study, we identified *receipt of a college credential requiring a year of more of study to earn* by the end of three years as the most important outcome measure of VIDA's educational success.

Chapter 4 presents the impact study findings on employment and earnings. The shortterm impact study conducted a relatively limited analysis of impacts on employment and earnings. The expectation was that such impacts would take longer to emerge, in part because many participants in the program would likely still be engaged in training at the end of that 24month follow-up. This report provides more detail on impacts on employment for a period when such impacts are expected to emerge. This permits examining whether the occupational training gains that program participants achieved after 24 months translate into economic gains in the workplace three, four, or five years out. For this three-year impact study, we identified *earnings in quarters 12 and 13 after random assignment* as the most important outcome measure of VIDA's employment success.

Chapter 5 presents the impact study findings on other life outcomes such as debt, health insurance coverage, receipt of means-tested public benefits, and childbearing and living arrangements. If VIDA has an impact on earnings, then it is also expected to affect those economic outcomes. Even without an earnings impact, there may be impacts on some of them. For example, the financial assistance component of the program may reduce student debt. In addition, positive impacts on engagement in postsecondary activities could plausibly affect childbearing and living arrangement outcomes.

Chapter 6 discusses the findings from exploratory analysis by gender, including gender differences in impacts in college enrollment, credential attainment, and employment and earnings.

Chapter 7 presents information on the costs of VIDA during the three-year follow-up period.

Chapter 8 concludes with a discussion of the findings in the context of research on related programs, lessons for programs and the open questions for upcoming longer-term follow-up research on VIDA.

A separate **Appendix** volume provides technical details on analysis methods, data sources, and sensitivity analyses.

2. Methods

This chapter describes the PACE project's research design and analytic methods as applied to the VIDA program three or more years after random assignment. It begins with a discussion of the program's theory of change and associated research questions. It then describes the evaluation design, data sources, and analysis procedures.

2.1 The Career Pathways Theory of Change as Applied to VIDA

Exhibit 2-1 on the next page depicts the career pathways theory of change as applied to VIDA's program. It shows how the program is hypothesized to produce impacts on "intermediate" outcomes such as career knowledge and resources, which in turn will lead to effects on "main" outcomes such as hours of training and credential receipt in the short term, and eventually to gains in employment, earnings, longer-term credentials, and other life outcomes.

Starting in the box at the left, the theory of change begins with **program inputs** and **program components**. The short-term report (Rolston et al. 2017) found that these program inputs (VIDA counselors, funding and information from economic development corporations, colleges and universities, and participant characteristics) and program components (assessment, instruction, supports, and employment connections) were largely in place and operated as planned in the first two years. VIDA supported participants primarily in one-year and two-year educational certificate and degree programs until they achieved a target credential. VIDA staff estimated that on average it would take participants about two and a half years to attain their credential and exit the program. Based on these assumptions, our analysis plan did not call for measurement of VIDA service receipt in this report's three-year survey.

The middle box shows the "**intermediate**" **outcomes** expected. Improving these outcomes was not the ultimate goal of the VIDA program. However, the theory of change suggests that doing so—that is, improving participants' competencies and career knowledge, removing barriers to persistence in training, and addressing life challenges—is a necessary precursor to improving the outcomes of interest. VIDA intended to affect these intermediate outcomes quickly so that students would be better positioned to engage in education and training. By and large, the short-term report (Rolston et al. 2017) found improvements in each of these areas.

The "**main**" **outcomes**, which are the focus of this report, appear in the far-right box. These are the ultimate outcomes the VIDA program is trying to achieve, and they include postsecondary attainment, career-track employment, and other life outcomes. The short-term report assessed the impacts on *postsecondary attainment* after 24 months; now we are re-assessing them after a three-year and longer follow-up period. We expected some proportion of the sample to still be enrolled in two-year degree programs beyond the 24-month period and believed it possible that educational impacts might continue to evolve.

Exhibit 2-1: Career Pathways Theory of Change as Applied to VIDA

PROGRAM INPUTS					
ORGANIZATION	PARTICIPANTS				
VIDA VIDA counselors and management staff Economic development corporations provide funding, information on demand occupations Funding from foundations and local governments Colleges and universities	 At least 18 years of age Unemployed, underemployed, or on public assistance A resident of Cameron, Hidalgo, Starr, or Willacy County High school diploma or GED Interest in high-demand occupations identified by VIDA 				
PROGRAM C	OMPONENTS				
ASSESSMENT	SUPPORTS				
 College entrance exam scores or math, reading and writing assessment completed during Placement Session Career Decision-Making System assessment Individual in-person interviews by VIDA counselors and senior staff (both at application and after admission to VIDA) Financial needs assessment 	 Dedicated counselor to provide weekly counseling on academic and personal issues in group and individual settings Financial assistance with tuition, books, course-related materials, childcare and transportation, and emergency assistance Referrals to needed supports Required community service 				
INSTRUCTION	EMPLOYMENT				
 16-week College Prep Academy to prepare participants at grade levels 10-12 for college entrance exams Enrollment in local colleges' certificate and associate's degree programs related to in-demand occupations (less commonly, enrollment in last two years of bachelor's degree programs) 	 Group counseling sessions on job search preparation and skills Support of credentials in high-demand occupations only Follow-up post- completion to identify employment status; help unemployed with resume 				

INTERMEDIATE OUTCOMES

GENERAL (21ST CENTURY) COMPETENCIES

- Improved basic academic skills for College Prep Academy participants
- Improved psycho-social skills (persistence, academic self-confidence, sense of belonging)

SPECIFIC COMPETENCIES

• Improved occupational skills in desired area

CAREER KNOWLEDGE

- Increased awareness of steps needed to reach career goals
- Increased knowledge of labor market

RESOURCES

• Constraints addressed through financial assistance and counseling services

LIFE CHALLENGES

Reduced financial hardshipAbility to address and mitigate stressors

MAIN OUTCOMES

POSTSECONDARY ATTAINMENT

• Enrollment in certificate or degree program tied to in-demand occupation

Credits

• Credentials: completion of certificate or associate's degree program (less commonly, bachelor's degree program)

SUCCESSFUL IN CAREER-TRACK EMPLOYMENT

- Attainment of industry licenses, if applicable
 Employment in an in-demand occupation with
 benefits and living wage
- Employment progression and possibility for further education

OTHER LIFE OUTCOMES

- Improved individual and family well-being
- Improved family economic status

CONTEXTUAL FACTORS

LOCAL POSTSECONDARY TRAINING SYSTEMS

 Certificate and degree programs offered by local colleges and universities

LOCAL ECONOMY Job openings in demand occupations Industry growth in demand occupations

• Size, characteristics of target population

- Other service providers
- Referral partners

Aside from some measures of career progress and job quality, the short-term report did not assess impacts on *employment and earnings*, anticipating that it was too early to draw conclusions at that time. However, with some treatment group members participating in one-year certificate programs and some completing two-year degrees within the minimum time frame, it seems reasonable to expect positive impacts to emerge within three years.

The career pathways theory of change also specifies that if improvements in educational attainment lead to improvements in employment and earnings, then those should in turn lead to improvements in *other life outcomes*. These other life outcomes include measures of family economic well-being such as less student and personal debt, health insurance coverage, and less financial distress. Also, given this study's findings from the short-term report on childbearing, as well as broader evidence of effects of education on childbearing and living arrangements in the general population, there is reason to examine three years out whether VIDA had further impacts on childbearing and other family and household formation outcomes.

Finally, the exhibit shows that a number of **contextual factors** can condition impacts, including other available training programs and local economic conditions. The earlier implementation study explored these factors (Rolston et al. 2017).

2.2 Research Questions at Three-Year Follow-up

Three years after random assignment, what were the effects of VIDA on:

- education outcomes;
- entry into career-track employment and higher earnings; and
- individual and family well-being, including income and other life outcomes?

Each of these research questions is addressed, in turn, in the chapters that follow.

2.3 Data Sources

Analyses in this report draw on data from several sources: (1) college records from the local colleges and universities attended by almost all study participants who attended any college; (2) baseline surveys administered to study participants immediately prior to their random assignment; (3) follow-up surveys collected at approximately 20 months and three years after random assignment; (4) school enrollment data from the National Student Clearinghouse (NSC); and (5) employment and earnings data from the National Directory of New Hires (NDNH). We describe each of these data sources below.

All the data sources for this report have at least three years of follow-up data, which is the main time frame for this report. However, we have and report longer follow-up for some outcomes that are measured using administrative data. Specifically, the college records data we use for most of our key education outcomes and the NDNH data we use for earnings outcomes have four years of follow-up data for the full sample and five years of follow-up data for the 80 percent of sample members who enrolled in June 2013 or earlier ("the early cohort").

2.3.1 Local College Records

To measure treatment and control group members' enrollment in education and training, as well as their credit and credential receipt, we used records from the four local colleges and universities with which VIDA partners.¹⁵ These data covered college experiences for four years after random assignment for the full sample and five years for the 80 percent of the sample enrolled in June 2013 or earlier. The three community colleges that offered one-year certificates and two-year associate degrees were South Texas College (McAllen), Texas Southmost College (Brownsville), and Texas State Technical College (Harlingen).¹⁶ The fourth school—University of Texas Rio Grande Valley (main campus in Brownsville)—offered four-year bachelor's degrees as well as master's and doctoral degrees.¹⁷

Analyses of the broad-coverage NSC data revealed that 96 percent of treatment and control group members attending any college in the three years after random assignment attended these four and no other NSC-covered colleges.¹⁸ Because of this near-complete and balanced coverage, the local college records are the source of all education outcomes with one exception (*receipt of an exam-based license or certificate*). Appendix B provides detailed descriptions of the outcomes based on the college records data used in this report. See Appendices D and E for sensitivity tests for outcome measures from the different data sources.

2.3.2 Baseline Surveys

Just prior to random assignment, all 958 study participants completed the **Basic Information Form**, which VIDA had incorporated into its application. This form captured demographic information, family characteristics, educational history, and work and earnings information. At that time, study participants also completed the **Self-Administered Questionnaire** to collect sensitive personal information such as training commitment and academic confidence.¹⁹ This

- ¹⁸ NSC contains information on enrollment, degree attainment, and other education outcomes from 3,600 colleges and universities.
- ¹⁹ VIDA staff administered the program's application, which contained the Basic Information Form, on paper and then entered it into VIDA's online database. Because the Self-Administered Questionnaire asked for personal information (criminal records, psycho-social skills, social support, career orientation and knowledge, and personal and family challenges), study participants filled out a paper form and then placed it in a sealed envelope that VIDA staff sent to Abt Associates for data entry.

¹⁵ For simplicity and because VIDA did not support graduate education, we refer to records from both the colleges and universities as "college" records.

¹⁶ South Texas College also offered bachelor's degrees in Applied Science and Applied Technology. It was one of only three community colleges in the state that had approval from the Texas Higher Education Coordinating Board to offer such degrees.

¹⁷ During the study enrollment period, the University of Texas system decided to dissolve what had been the University of Texas Brownsville and the University of Texas Pan American. It replaced them with the University of Texas Rio Grande Valley, with a main campus in Brownsville and other campuses throughout the region. The dissolution occurred in summer 2015, and the first class at the new institution began in fall 2015.

report uses data from these baseline surveys to describe the sample and for defining subgroups of interest. We also use these data for regression adjustment.

2.3.3 Follow-up Surveys

This report describes outcomes measured in a three-year participant follow-up survey, with some reference to the earlier follow-up survey data analyzed in the short-term report (see Rolston et al. 2017).

20-month Survey. The follow-up survey for the short-term report was administered beginning at 15 months after random assignment, and the median response occurred at 20 months. It provided measures of outcomes that the theory of change indicated VIDA might affect in the short term. The findings summarized in Chapter 1 that are not based on college records data are based on those survey data. The other use of the 20-month survey data in this report is to help impute values for missing data on job and education spells from the three-year follow-up survey. Administered by telephone or in person, the 20-month survey had an overall response rate of 85 percent (91 percent in the treatment group, 78 percent in the control group).

Three-year Survey. We designed the second follow-up survey to measure outcomes that the theory of change indicated the program might affect over a longer time horizon, such as employment and other life outcomes. The survey also captured detail on respondents' educational history, a limited number of psycho-social skills, and their children's experiences with school. The response rate for the three-year follow-up was 76 percent overall (81 percent in the treatment group, 70 percent in the control group). The median completion occurred at 38 months after random assignment.²⁰ Appendix C provides detailed descriptions of the outcomes based on the three-year survey data used in this report.²¹

2.3.4 National Student Clearinghouse

This study used data on college enrollment from NSC to evaluate the coverage of local college records (see Appendix D) and to adjust for non-response bias in the survey (see Appendix C). NSC is a nonprofit organization that collects data on student enrollment, degrees earned, and other credential completion data from most U.S. institutions of higher education to aid the administration of student loan programs. Researchers also use NSC data to study college access and persistence. As in most administrative data systems, data are subject to various coverage and content limitations. Most critically, coverage of private for-profit two-year colleges is very low (less than 30 percent), and NSC makes no attempt to collect data from schools that are not accredited to grant degrees.

²⁰ More than 75 percent of the respondents completed the survey 40 months or less after random assignment. The longest lag between randomization and interview was 47 months. Additional months of follow-up potentially increases recall error and shifts means for time-sensitive variables. However, the lags were well matched between the treatment and control groups, so this variation in lags between randomization and interview should not lead to false claims of program effects.

²¹ The full instrument is available at <u>http://www.career-pathways.org/career-pathways-pace-three-year-instrument/</u>.

2.3.5 National Directory of New Hires

Wage records from NDNH are the primary data source for employment and earnings analyses in this report. Maintained by the federal Office of Child Support Enforcement, NDNH includes quarterly earnings measured by state Unemployment Insurance systems and earnings of federal civilian and military employees provided by various federal agencies.²² The research team had access to these data for study sample members for two years prior to random assignment through the end of the evaluation period.

At the time this three-year impact report was written, 16 quarters (four years) of NDNH data were available for the full sample and 20 quarters (five years) of data were available for a cohort of early study enrollees (randomly assigned in June 2013 or earlier) that represent 80 percent of the full sample. However, the pre-specified confirmatory and secondary outcomes in this report use only the first 13 quarters. Additional detail is provided in Appendix F.

2.4 Evaluation Design and Analysis Plan

The evaluation uses an experimental design to estimate the impact of access to VIDA on participants' outcomes. Such a design ensures that any estimated impacts can be attributed to program access rather than to unmeasured differences between eligible study sample members with access (the treatment group) and without access (the control group).

As designed, the experiment captures impacts for all sample members, regardless of whether those assigned to the treatment group actually received the program services. In other words, this design—an "intent to treat" approach—assesses whether *access* to the program including all of its components led to better outcomes for those offered the chance to participate in it, relative to what they could have obtained without the program. For a voluntary (rather than mandatory) program, the intent to treat estimate is often the most policy relevant. However, it is important to remember that those offered a slot in VIDA are being compared to those denied a slot but who still had access to other programs and services available in the local areas, rather than being compared to no training.

Another important aspect of the evaluation's design is that the experiment captures the effects of VIDA *overall*, rather than the contributions of its components. Designers of VIDA deliberately included a package of multiple strategies (e.g., assessment, instruction, supports, and employment connections) that they hypothesized were needed to produce desired impacts. As a result, the evaluation focuses on whether the program as a whole, when implemented in real-world conditions, produces an impact.

2.4.1 Hypothesis Testing

The career pathways theory of change as applied to VIDA targets a range of outcomes. The evaluation structures the analysis by establishing three categories of hypotheses:

²² More detail is available at: <u>https://www.acf.hhs.gov/css/training-technical-assistance/guide-national-directory-new-hires</u>
- **Confirmatory hypotheses** center on outcomes most critical to judging the program's success in achieving its goals within the designated time period. By limiting the confirmatory analysis to a single outcome in each of two separate domains, we avoid the statistical problem that arises from "multiple comparisons."²³ For the three-year impact study of VIDA, we specified two confirmatory hypotheses: *an increase in receipt of a college credential requiring a year or more of study to earn* in the education domain, and *an increase in average quarterly earnings in quarters 12 and 13 after random assignment* in the employment domain.²⁴ Because each has a hypothesized direction (an increase in the average level of each outcome), we applied a one-tailed test of statistical significance, ignoring possible effects in the other direction.
- Secondary hypotheses address a limited set of other important indicators of program success. Like confirmatory hypotheses, secondary hypotheses posit effects in an expected direction. For this reason, we again applied one-tailed tests for statistically significant effects only in the specified direction. Outcomes for these hypotheses at three-year follow-up include other educational measures, such as *number of college credits earned, number of full-time-equivalent months enrolled in college; indicators of career progress, such as hourly wage rate, job skill requirements;* and *measures of financial well-being, such as student debt*. The hypothesized direction is an increase in the average level for all outcomes, other than some measures of financial distress, where we hypothesize a decrease in the average level.
- **Exploratory hypotheses** include a larger number of additional possible effects for related outcomes. They are intended to help improve our understanding of findings from the confirmatory and secondary analyses. Exploratory hypotheses may, but do not necessarily, speculate about the direction of effects, and therefore we applied two-tailed tests. Some examples of outcomes for exploratory hypotheses include *quarterly earnings and employment for each quarter after random assignment*, various measures of *job quality*, and measures of *financial well-being* such as household income.
- Exploratory outcomes for VIDA also include examining the confirmatory and secondary outcomes for a subsample of earlier enrollees where data up to five years after random assignment is available. Comparisons of program impacts between subgroups of study sample members are also exploratory.

²³ Testing for program impacts on many outcomes causes a statistical problem: it provides the program many chances to demonstrate success, and with enough chances even a totally unsuccessful program might appear to have positive impacts. If the evaluation did not account in some way for the multiplicity of hypothesis tests, some of its findings would reach conventional levels of statistical significance merely by chance, even if there were no real effects on any outcome. This is known as the problem of "multiple comparisons."

²⁴ The confirmatory and secondary hypothesis were pre-specified for a three-year follow-up period because that was the follow-period we expected to have data available for this report; however, we also report outcomes for a longer follow-up period when the administrative data are available.

Prior to estimating VIDA impacts, the research team published an analysis plan specifying key hypotheses and outcome measures (see Judkins et al. 2018). The team subsequently assessed data quality, refined the plan, and publicly registered it on the Open Science Framework website.²⁵ The purpose of the analysis plan and registration was to guide the work of the research team and publicly commit to particular hypotheses and an estimation approach to align with ACF's commitment to promote rigor, relevance, transparency, independence, and ethics in the conduct of evaluations.²⁶

2.4.2 Impact Estimation Procedures

We conducted analyses to estimate the impact of VIDA on the hypothesized outcomes described above and for selected subgroups.

Random assignment ensures that on average, study sample members in the treatment and control groups will have similar characteristics at baseline. Random assignment also ensures that measured differences in subsequent outcomes provide unbiased estimates of program impacts. To address any effects that chance differences arising from random assignment might have on estimates, analysts typically estimate impacts using a procedure that compensates for chance differences in measured baseline characteristics.

Such procedures also help to increase the precision of estimates, as long as the estimating equation does not include too many covariates. To select baseline characteristics and estimate impacts, we developed an approach that respects the conservative tradition of including out-ofbalance characteristics, no matter what, in addition to empirically selected covariates, but without incurring large losses in precision. We describe details of this approach, a recently developed technique called "least absolute shrinkage and selection operator (LASSO)," in Appendix A.

After identifying covariates, we used a regression-adjustment model to estimate impacts three (or more) years out. All analyses of survey data applied weights developed to adjust for differential nonresponse across groups of study participants that have different likelihoods of survey response. Additional details on these and other aspects of the analysis appear in Appendices A and B.

In this report, our general rule is to describe and discuss in the text only those estimates that are statistically significant at the 10 percent level. In subgroup analyses, we discuss a difference in effects only where the difference between subgroups is statistically significant. Consistent with this, we typically do not mention significance, or its level, in the text, but this information can be found in the accompanying tables and charts. When we discuss a result that is non-significant, we explicitly note it. We do this primarily in Chapters 6 and 7, which are more interpretative and

²⁵ See <u>https://osf.io/bpm8u/</u> for the short-term report registration and <u>https://osf.io/nr896/</u> for the threeyear report registration.

²⁶ See ACF's Evaluation Policy: <u>https://www.acf.hhs.gov/opre/resource/acf-evaluation-policy</u>.

exploratory than Chapters 3 through 5, which straightforwardly present the study's main findings.

The text box *How to Read Impact Tables* below describes how to navigate and understand the tables in the impact chapters.

How to Read Impact Tables

The exhibits in Chapters 3-7 show the outcome measure in the left-most column (Outcome).

The next column (**Treatment Group**) presents the treatment group's regression-adjusted mean outcome, followed in the next column by the control group's actual mean outcome (**Control Group**). The regression adjustments correct for random variation in baseline covariates between the two groups (and may differ slightly from the raw means) and improve the precision of the estimates.

The next column (**Impact (Difference**)) is the impact of being offered VIDA—that is, the difference between the treatment and control group means. The **Standard Error** column is a measure of uncertainty in the estimated impact that reflects both chance variation due to randomization and any measurement error.

The column labeled **Relative Impact** presents the impact as a percentage change from the control group mean. It offers a sense of how "big" or "small" the impact of the program on the treatment group is, at least relative to the control group's level. For outcomes with no natural unit of measurement, we report an **Effect Size** instead of the relative impact. The effect size is a standardized measure that defines impacts as a fraction of the pooled standard deviation across the treatment and control groups. It offers a sense of the size of the impact relative to how much the outcome varies across the full sample and allows for comparison of the size of the impact across scale outcomes.

The final column, *p***-Value**, is the probability that the observed or a larger difference between the treatment and control groups would occur by chance, even if there was in reality no difference between the two groups.

Statistical significance

There are several common standards for judging statistical significance. In this report, tests are considered statistically significant and highlighted in tables if the *p*-value is less than .10. The smaller the *p*-value, the more likely that the observed difference between the treatment and control groups is real, rather than occurring by chance. Tests with *p*-values smaller than .10 are separately flagged:

* for .10 (10 percent level)

- ** for .05 (5 percent level)
- *** for .01 (1 percent level)

Categories of findings

Tests of statistical significance for confirmatory and secondary outcomes are one-sided tests because we have a directional hypothesis for these impacts. The confirmatory and secondary analyses are reported using **bold text** in the tables. Tests of significance for exploratory outcomes use a two-sided test, a test we use because we do not have a directional hypothesis. Exploratory analyses are reported using regular (not bolded) text in the tables.

3. Impacts on Postsecondary Education and Training

This chapter reports the evaluation's estimates of VIDA's impacts on postsecondary education and training for the three-year follow-up period, with some analyses extending to four and five years after random assignment.

The career pathways theory of change as applied to VIDA posits that the high level of personal, academic, and financial support provided by the program will enable participants to attend and persist in college and obtain college certificates and degrees. Given VIDA's focus on college credentials, we judged that the best measure of VIDA's success in the education domain after three years is *receipt of a college credential requiring a year or more of study to earn*, which was pre-registered as the confirmatory education outcome. The short-term report found that VIDA had positive impacts on college credits earned, full-time enrollment, and college credentials earned in the first two years after random assignment.

Based on college records, at 24 months after random assignment more of the treatment group than the control group were in training (about 55 percent versus 48 percent), so it seemed plausible that the impacts on education outcomes, such as college credits and credentials, would grow in the longer follow-up period covered in the current report. That is what this chapter examines, using primarily 48 months of follow-up outcomes captured in local college records data for the entire sample (478 treatment group, 480 control group members). The results show that **VIDA's impact persisted or grew** on a broad set of educational outcomes, including college credentials requiring a year or more of study to earn.

The chapter's main sections present impacts on credentials (Section 3.1) and on enrollment and credits (Section 3.2). For those outcomes based on local college records, in addition to analyses covering up to four follow-up years for the full sample, the chapter examines impacts to five years for the 80 percent of sample members who enrolled in June 2013 or earlier ("the early cohort").

3.1 Impacts on Credentials

This section starts with an examination of impacts on credentials for the full sample at both three years and four years after random assignment, then examines impacts for the early cohort.

VIDA had a 9 percentage point impact on receipt of college credentials requiring a year or more of study to earn, as well as positive impacts on earning other types of credentials.

After three years, 61 percent of those in the treatment group and 52 percent of those in the control group had earned a college credential requiring a year or more of study (Exhibit 3-1 below). This 9 percentage point increase in receipt represents an 18 percent increase over the control group. The impact persisted to the end of the fourth year after random assignment.

VIDA also had a positive impact on receipt of other types of credentials. By the end of the third year, VIDA increased receipt of an associate degree or higher by 7 percentage points (41 percent in the treatment group versus 34 percent in the control group; Exhibit 3-1). This was entirely due to an increase in associate degrees, because there was no detectable increase in bachelor's degrees (not shown).²⁷ VIDA's impact on associate degrees persisted into the fourth year. At 9 percentage points, the four-year impact was about twice as large as the 4 percentage point increase at the end of 24 months (covered in the short-term report).²⁸

VIDA had a 13 percentage point impact on receipt of any type of college credential after three years, which similarly persisted into the fourth year (Exhibit 3-1). At 13 percentage points, the four-year impact was approximately 60 percent larger than the impact at the end of 24 months (8 percentage points).

Lastly, the study did not detect a positive impact on receipt of exam-based certifications or licenses.

VIDA's positive impacts on credentials persisted into the fifth year for the subsample with five years of follow-up.

For the subsample of study participants who enrolled early enough to have five years of followup, VIDA increased the receipt of a college credential requiring a year or more of study by 13 percentage points (69 percent for the treatment group versus 55 percent for the control group; Exhibit 3-1 above) by the end of the fifth year. This impact represents a 24 percent increase over the control group. VIDA also had positive impacts on other degrees and credentials received, also shown in Exhibit 3-1.²⁹

²⁷ Certain programs of study and credentials supported by VIDA—particularly the nursing and allied health programs in which three quarters of participants enrolled—include multiple credentials earned along an educational pathway. For example, among VIDA participants who enrolled in nursing and allied health programs, half enrolled in Licensed Vocational Nursing (LVN), which potentially has an interim credential of Certified Nursing Assistant (CNA). Thus, the numbers in the table may include receipt of more than one credential by some sample members as well as interim credentials that are not the final credential that is eligible for VIDA's support.

²⁸ For outcomes based in college records, we assessed growth in impacts from the short-term report by testing for statistically significant positive impacts over the two-year period of 25 to 48 months after random assignment. The impacts on associate degrees and other educational outcomes reported in the text as increases in this period were statistically significant.

²⁹ There were no statistically significant differences between the impacts included in Exhibit 3-1 and Exhibit 3-2 over the four years for which the early cohort's impacts can be compared to those of participants assigned after June 2013. This suggests that the early cohort is a reasonable representation of the full sample.

By the end of five years, nearly all treatment group members (99 percent) had exited VIDA, according to VIDA program data.³⁰ This persistence of impacts on credentials through the fifth year means that the treatment group continued to attain credentials at least at the level of the control group even after VIDA's financial assistance and counseling services had ended. This is noteworthy given that it is common to find that impacts shrink after program participation ends (Arnold Ventures Straight Talk on Evidence 2019).

	Treatment	Control	Impact	Standard	Relative					
Outcome	Group	Group	(Difference)	Error	Impact	<i>p</i> -Value				
Received college credential requiring 1 or more years to earn (%)										
Three-year (confirmatory outcome)	61.1	51.7	+9.4***	2.9	+18.2	<.001				
Four-year	65.1	55.0	+10.1***	2.9	+18.4	<.001				
Five-year (early cohort) ^a	68.5	55.1	+13.4***	3.2	+24.3	<.001				
Received associate degree or higher (%	6)									
Three-year	41.2	34.0	+7.3*	3.0	+21.5	.007				
Four-year	46.6	37.9	+8.7**	3.0	+23.0	.004				
Five-year (early cohort)ª	51.2	42.3	+8.9*	3.5	+21.0	.010				
Received any college credential (%)										
Three-year	66.7	54.0	+12.7***	2.9	+23.5	<.001				
Four-year	70.5	57.1	+13.4***	2.9	+23.5	<.001				
Five-year (early cohort)ª	72.9	57.2	+15.7***	3.2	+27.4	<.001				
Received exam-based certification or										
license (%)										
Three-year ^b	47.1	44.8	+2.3	4.1	+5.1	.293				
Sample size	478	480								

Exhibit 3-1: Impacts on Credential Receipt

Source: All outcomes are from VIDA partner college records, except receipt of an exam-based certification or license which is based on the PACE 20-month and three-year follow-up surveys.

^a For the early cohort subsample, including 381 treatment group and 383 control group members.

^b Based on responses to the follow-up survey, so includes the 386 treatment group and 338 control group member survey respondents. *Note:* Confirmatory and secondary outcomes are bolded and statistical significance is based on one-tailed tests; exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

³⁰ Exits from the program included those who completed and graduated as well as those who stopped participating in VIDA without completing, whether of their own volition or for not complying with program requirements. Following are the percentage of treatment group members who had exited in each year after random assignment: 37 percent by the end of 12 months; 65 percent by the end of 24 months; 85 percent by the end of 36 months; 95 percent by the end of 48 months; and 99 percent by the end of 60 months.

3.2 Impacts on Enrollment and Credits

This section examines impacts on additional secondary and exploratory outcomes, including *enrollment* and *credits earned* three years after random assignment, with some analysis of fourand five-year impacts. Enrollment and credits outcomes are necessary intermediate steps to the more substantial outcome of students' earning a credential.

Note that this chapter addresses one measure of credits, but three different kinds of measures of enrollment: full-time-equivalent (FTE) enrollment, full-time enrollment, and any enrollment. *FTE months enrolled in college* is a cumulative measure for a given follow-up period. It is the sum of values ranging from zero to one for each month, where the value is determined by either the fraction of time an individual enrolled part-time, one for full-time enrollment, or zero for not enrolled. Impacts on FTE enrollment is one useful tool for assessing VIDA's effect on college-going, because it captures all enrollment, full-time or part-time, and appropriately weights each to reflect the total share of time in school. *Full-time enrollment* captures the proportion of the sample enrolled full-time at any point within each six-month period since randomization, and *any enrollment* captures the proportion who were enrolled at any time in each period, regardless of the level.

■ VIDA had continuing positive impacts on college enrollment.

VIDA increased FTE enrollment by 2.2 months after three years and 2.8 months after four years (Exhibit 3-2). For the early cohort after five years, the treatment group was enrolled in college 3.4 months more than the control group. The impacts across the third, fourth, and fifth years show that VIDA's impact on FTE months of enrollment grew not only in absolute terms but also as a percentage of the control group mean. At three years after random assignment, VIDA had a 20 percent relative impact on FTE enrollment; growing to 23 percent at four years; and 27 percent at five years for the subsample that enrolled early.

	Treatment	Control	Impact	Standard	Relative	
Outcome	Group	Group	(Difference)	Error	Impact	<i>p</i> -Value
FTE Enrollment (months)						
Three-year	13.49	11.28	+2.21***	0.51	+19.6	<.001
Four-year	15.02	12.22	+2.80***	0.61	+22.9	<.001
Five-year (early cohort) ^a	16.32	12.89	+3.44***	0.80	+26.7	<.001
Sample size	478	480				

Exhibit 3-2: Impacts on Months of FTE Enrollment

Source: VIDA partner college records.

^a For the early cohort subsample, which includes 381 treatment group and 383 control group members.

Note: Secondary outcomes are bolded and statistical significance is based on one-tailed tests; exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

Longitudinal examination of treatment and control group college enrollment in six-month periods after random assignment provides another perspective on VIDA's ongoing positive educational impacts. VIDA's impacts on any college enrollment—that is, whether a participant enrolled at all

(part-time or full-time) in each six-month period—are 10 percentage points (28 percent for the treatment group versus 18 percent for the control group) in the beginning of the fourth year (months 37-42) and 8 percentage points (23 percent versus 15 percent) at the end of the fourth year (months 43-48) (Exhibit 3-3).³¹ The continued impacts on any enrollment in the fourth year occur even though great majority of treatment group members were not participating in VIDA during that time. According to VIDA program data, 85 percent of participants were no longer receiving services at the beginning of the fourth year and an additional 10 percent stopped sometime during that year.

These impacts are roughly of the same magnitude as in the periods that saw the largest impact: months 7-18 during which treatment group members were participating in VIDA. The actual levels of enrollment relative to VIDA participation are also notable—for example, in months 37-42, about one quarter (28 percent) of treatment group members were enrolled in college, even though only about an average of 13 percent were still in the VIDA program in that period.³²

For the early cohort, significant positive impacts on any enrollment continued through five years after random assignment, although they decreased in magnitude to 5 percentage points for months 55-60 (not shown).³³

With respect to full-time enrollment, impacts were still detected in the fourth year, despite few participants receiving VIDA's financial and counseling support to do so. In the periods 37-42 months and 43-48 months, impacts on full-time enrollment were 4 and 3 percentage points, respectively (Exhibit 3-3), or about 40 percent of the impact on any enrollment (4 divided by 10 and 3 divided by 8 for the two periods). Although positive, the magnitude of these impacts was one third to one half the size of the largest impacts on full-time enrollment observed when most

³¹ VIDA required that participants enroll full-time in college-level coursework, with flexibility for less-thanfull-time enrollment under certain circumstances. For purposes of analysis, the research team defined full-time as enrollment in 12 or more credits, but the program did not have a uniform definition. In addition, as discussed in the short-term report (Rolston et al. 2017), VIDA permitted participants to remain in the program when full-time enrollment was not possible if the participant had a legitimate reason (e.g., a family emergency, a required course not offered in a given semester) and demonstrated a commitment to returning to full-time enrollment typically within a year. VIDA attempted to work with these participants to keep them engaged in the program in some capacity so they could resume at a later point.

³² The 13 percent includes both individuals who are active and those in a hold status. "Hold" status applies to participants who have not participated fully for more than a semester. While on hold, they do not meet with their counselor, but VIDA periodically tries to reengage them for a year before exiting them. VIDA did not maintain a separate code for the hold status in this period, but based on the program's earlier data system, we project that somewhat fewer than half of the 13 percent were active in the program.

³³ Readers should be cautious about extrapolating the fifth-year enrollment impacts from the early cohort to the full sample. In contrast to the impacts shown in Exhibits 3-1 and 3-2, impacts on any enrollment are significantly different (larger) for the early cohort in months 1-6, 7-12, and 43-48, as well as for the full first four years (i.e., months 1-48).

treatment group members were participating in VIDA and required to enroll full-time (9 and 10 percentage points in months 7-18).



Exhibit 3-3: Levels of and Impacts on College Enrollment

Source: VIDA partner college records.

Note: Enrollments in sixth-month time periods are exploratory outcomes and statistical significance is based on two-tailed tests. Sample size is 478 treatment group and 480 control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

That VIDA would have such large enrollment impacts after almost all participants had left the program was not anticipated in the research team's formulation of the analysis plan. The career pathways theory of change as applied to VIDA posits that after participants complete their target courses of study and are no longer receiving VIDA's intensive supports, they will use their training to gain family-supporting jobs in high local demand. VIDA's approach is to fund new participants in their education so that more people attain well-paying jobs, rather than to continue funding existing participants in further training once they complete their target credential. Finally, independent of VIDA's particular program design, fading of impacts after a program ends, one form of which is control group catch-up, is very common in randomized trials across many fields of study.³⁴

³⁴ Chapter 7 provides an illustration of such catch-up in a program with strong similarities to VIDA.

There is evidence that one of VIDA's two main program features—financial support for education—may have contributed to VIDA's impacts on former participants' college enrollment. In Chapter 5, we describe that treatment group members had less student debt than control group members (Exhibit 5-2). Very plausibly this could have helped former VIDA participants to enroll in school at higher rates than the control group, even after their participation in VIDA ended.

Although without such direct evidence, perhaps VIDA's other main component—weekly counseling sessions—also played a role. The sessions were designed to help participants develop a set of problem-solving and resiliency skills that likely endured beyond the end of the program. These skills aided participants in managing the competing demands of school, home life, and work and showed them that education could be integrated with their other responsibilities.³⁵

Finally, VIDA's support may have helped participants see that they were capable of completing college-level coursework and graduating. With this confidence they were able to pursue further education and training on their own. Discussions with VIDA staff indicated that they are aware anecdotally that participants continue in their education. A senior staff person said, "We may only be able to help students with an associate degree, but we're finding many individuals continue with a bachelor's or greater on their own. The associate degree wasn't the end for them."

Positive impacts on college credits continued over the first four years after random assignment.

Over three years, treatment group members earned 39 credits, six more credits than the control group (Exhibit 3-4). By the end of the fourth year, the impact had grown to eight credits.³⁶ For the early cohort, the impact after five years was 10 credits. Like the impacts on credentials and enrollment, VIDA continued to have positive impacts without evidence of control group catch-up well after almost all in the treatment group left the program. Given VIDA's positive impacts on both any enrollment and full-time enrollment over four years, it follows that impacts on credits earned would also continue.

³⁵ Other reasons for these continuing enrollment impacts such as participants failing courses or taking courses not applicable to their chosen target credential are not likely. VIDA counselors and staff closely monitored course enrollment, performance, and completion to help keep participants on track and to intervene quickly if issues arose so that they could be addressed. One driver for this close monitoring was making sure that VIDA's funds were being used for participants who were highly committed.

³⁶ We tested for impact on credits obtained in the third and fourth year. The estimate was significant (p=.02).

Exhibit 3-4: Impacts on Credits

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value
Full Sample						
Number of College Credits (#)						
Three-year	38.89	32.47	+6.42***	1.50	+19.8	<.001
Four-year	42.94	34.97	+7.97***	1.75	+22.8	<.001
Sample size	478	480				
Subsample						
Number of College Credits (#)						
Five-year (early cohort)ª	46.44	36.91	+9.54***	2.29	+25.8	<.001
Sample size	478	480				

Source: VIDA partner college records.

^a For the early cohort subsample, including 381 treatment group and 383 control group members.

Note: Secondary outcomes are bolded and statistical significance is based on one-tailed tests; exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

3.3 Summary of VIDA's Impacts on Education

At the end of three years, VIDA increased *receipt of a college credential requiring a year or more of study to earn*—the confirmatory education outcome of the analysis—by 9 percentage points, 18 percent of the control group level. VIDA also increased *receipt of an associate degree or higher, receipt of any college credential, credits earned,* and *FTE enrollment.* VIDA did not have a detectable impact on *exam-based credentials.* All the estimated impacts grew between 24 and 48 months, and they were sustained in the fifth year for the early cohort subsample (80 percent of the total sample) with five years of follow-up.

Because 85 percent of treatment group members had exited VIDA by 36 months, and 95 percent by 48 months, the research team did not expect persistent impacts on education outcomes in the fourth year. VIDA designed its program model to support participants' full-time enrollment in order to expedite completion of one-year certificate and two-year degree programs. With the credentials earned, participants should then be qualified for family-supporting jobs in high local demand. Senior VIDA staff expressed to the research team during qualitative field work that participation in the program typically had averaged about two and a half years.³⁷ Based on the design of the VIDA model, we did not expect to see positive impacts on *any enrollment* or on *full-time enrollment* well into the fourth year of follow-up. Even more unexpected was that impacts on *any enrollment* would be as large in the fourth year—after relatively few participants remained in VIDA—as at the high point (months 7-18) when 60 to 90 percent of the treatment group were still participating in VIDA. Sustained impacts on other education outcomes are consistent with the persistent impacts on enrollment.

³⁷ Seventy-eight (78) percent of VIDA treatment group members exited the program by two and a half years, so the program's average duration was shorter than its staff expected.

4. Impacts on Earnings and Employment

The career pathways theory of change as applied to VIDA suggests that positive impacts on college credentials will enable participants to advance to better-paying, secure, and satisfying jobs. While enrolled in school full-time (as required by VIDA), treatment group members may earn less than their counterparts in the control group. After VIDA participants complete their occupational programs, they should have gained greater skills and earned more credentials than control group members. With these skills and credentials, they should be more able than the control group to attain better paying jobs, so the net effect on treatment group earnings and employment should become positive.³⁸

As described in Chapter 3, VIDA had significant positive impacts on college enrollment, credits, and credentials for the three- to five-year period after random assignment. This chapter shows that despite the improvements on these education measures, **VIDA's positive educational impacts have not translated into detectable earnings and employment gains** in the same time frame.

The study's confirmatory employment-related outcome is *average quarterly earnings in follow-up quarters 12-13*. This outcome aims to be one comprehensive measure of participants' labor market experiences, capturing both amount of work and wage rate. For context, by three years after random assignment, 85 percent of treatment group members had exited VIDA.

The chapter presents impacts on earnings (Section 4.1) and on employment and job quality (Section 4.2). As in Chapter 3, the analyses cover as many as four follow-up years for the full sample and five years for the 80 percent of sample members who enrolled in June 2013 or earlier ("the early cohort").

4.1 Impact on Earnings

We used NDNH wage records to examine earnings during the follow-up period. Exhibit 4-1 below summarizes these findings.

VIDA had no detectable impact on average quarterly earnings in follow-up quarters 12 to 13.

As of quarters 12-13, average quarterly earnings (the confirmatory outcome in this domain) for the treatment and control groups surpassed \$6,000 (up from approximately \$1,200 in the

³⁸ Whether positive educational impacts are large enough to lead to detectable earnings impacts depends on both the size of any true earnings impacts and the power of the study to detect them. The VIDA evaluation has 80 percent power to detect about a 6 percentage point impact on attainment of college credentials requiring a year or more of college to earn, which is a moderate impact in the context of the findings of similar studies. But the VIDA evaluation can reliably detect only about a \$750 impact on average quarterly earnings, which would be a large (although well short of the largest) impact in the context of relevant studies.

quarter of random assignment). That said, the treatment group's average earnings were no different than the control group's average earnings in quarters 12-13. In addition, there were no detectable impacts on total earnings over all four years of follow-up or on earnings in the last year of that follow-up (quarters 13-16).

As is true with all estimates, the impact was estimated with uncertainty. When we incorporate that uncertainty into a range of plausible impacts, we estimate that the true impact on quarterly earnings could be as positive as +238 or as negative as -920 in quarters 12 and 13.³⁹ Most of this range is either negative or not sufficiently larger than zero to be meaningful.⁴⁰

			Impact	Standard	Relative	
Outcome	Treatment	Control	(Difference)	Error	Impact	<i>p</i> -Value
		Three-Year Ir	npacts			
Confirmatory Outcome: Average	6,082	6,423	-341	352	-5.3	.834
quarterly earnings Q12-Q13 (\$)						
Sample size	478	480				
Four-Year Impacts						
Total Earnings (\$)						
In last year of follow-up (Q13-Q16)	26,840	27,514	-674	1,512	-2.5	.656
Since randomization (Q1-Q16)	67,104	71,661	-4,558	3,385	-6.4	.179
Sample size	478	480				
Five-Year Impacts (for early cohort)						
Total Earnings (\$)						
In last year of follow-up (Q17-Q20)	31,350	30,915	+435	1,833	+1.4	.812
Since randomization (Q1-Q20)	75,928	79,695	-3,767	4,179	-4.7	.368
Sample size	381	383				

Exhibit 4-1: Impacts on Earnings

Source: National Directory of New Hires.

Note: Confirmatory and secondary outcomes are bolded and statistical significance is based on one-tailed tests. Exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

For the early cohort with five years of NDNH data, estimates on total earnings show a similar pattern to the four-year impact estimates for the full sample. In the fifth year of follow-up for the early cohort (quarters 17 to 20), the point estimate of the impact on total earnings is positive

³⁹ These values are the endpoints for a 90 percent confidence interval for average earnings in quarters 12 to 13.

⁴⁰ The upper end of this plausible range is not large relative to results from some recent studies. For instance, about two years after random assignment, impacts for Per Scholas (one provider in the WorkAdvance Demonstration) was +\$937 per quarter (Hendra et al. 2016). For QUEST (a similar program to VIDA and discussed in more detail in Chapter 7), impacts were an average of \$1,060 per quarter in the fourth year after random assignment (Roder and Elliot 2019).

(+\$435), though not statistically significantly different from zero and small relative to the control group's total earnings of \$30,915.

Exhibit 4-2 shows the trend in earnings by quarter from before random assignment to the 16th follow-up quarter. In the immediate pre-randomization period, there is the common drop in earnings prior to random assignment, as potential program participants seek training in response to a layoff or other life event.⁴¹ Following random assignment, average quarterly earnings begin to grow rapidly for the treatment and control groups, rising from \$2,000 or less per quarter at baseline and prior two quarters to approximately \$7,000 per quarter in quarter 16.

After an initial period of several quarters of negative earnings impacts, there were no further detectable positive or negative earnings impacts. Earnings for the treatment group were statistically significantly lower than for the control group in quarters 2, 3, 4, and 6, which approximately correspond to the first year and a half after random assignment. The negative impacts likely reflect wages foregone by the treatment group while they were enrolled in training full-time at higher levels than control group. After quarter 6, there were no detectable impacts through four years; for the early cohort, through five years (not shown).



Exhibit 4-2: Impact on Average Earnings in Successive Follow-up Quarters

Source: National Directory of New Hires.

Note: Earnings estimates within each quarter are exploratory outcomes and statistical significance is based on two-tailed tests. Sample size is 478 in the treatment group and 480 in the control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

⁴¹ This is known as the "Ashenfelter dip" (Ashenfelter 1978).

4.2 Impact on Employment and Job Quality

This section presents impacts on measures of employment and job quality. The research team measured employment-related outcomes using both administrative (NDNH) and follow-up survey data. The administrative data provide information on employment by quarter, beginning with the two quarters before random assignment and through 16 quarters after random assignment for the whole sample (through 20 quarters for the early cohort). As described in Chapter 2, the three-year follow-up survey captures information on aspects of employment such as employee benefits and indicators of job quality that are unavailable in the administrative data.

■ VIDA reduced employment during the period in which many treatment group members were active in the program (i.e., through quarter 6), but not thereafter.

As expected by the theory of change, a smaller proportion of the treatment group worked than did the control group in a period of high levels of active participation in VIDA (Exhibit 4-3), but not afterwards. For each of quarters 3 through 6, there were negative impacts on the treatment group's employment rate, ranging from 6 to 10 percentage points. In all other quarters, the study found no detectable impacts on employment. Five-year data for the subsample with that length of follow-up show a similar pattern of negative employment impacts and no positive or negative impacts later (not shown). This pattern is consistent with patterns of earnings impacts.





Source: National Directory of New Hires.

Note: Employment estimates within each quarter are exploratory outcomes and statistical significance is based on two-tailed tests. Sample size is 478 in the treatment group and 480 in the control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

VIDA increased employment in jobs requiring at least mid-level skills but had no detectable impact on other measures of career-pathways employment.

Consistent with analysis of administrative earnings data, survey data indicated that the treatment and control groups had similar employment levels at the time of the three-year follow-up survey (Exhibit 4-4). About two thirds of the treatment and control group members reported being employed at survey follow-up, with no detectable difference between them.

Examination of measures of career pathways employment showed mixed results. VIDA increased the proportion of treatment group members working in jobs requiring at least mid-level skills⁴²—a measure that reflects the career pathways goal of improving a VIDA participant's job skills. The increase was almost 6 percentage points: 44 percent of the treatment group versus 39 percent of the control group reported working in such a job (Exhibit 4-4).

In addition, as in the short-term report, we examined whether VIDA could improve hourly wages, an assumption of the theory of change. To do so, we compared the proportions of all treatment and control group members who earned at the level of the 60th percentile of the wage distribution for employed control group members, which for VIDA was \$17.50 or more per hour. Less than one third of either the treatment or control group were employed in jobs paying at least \$17.50 per hour, and we did not detect an impact. Finally, there was no detectable impact on treatment group members working in a job closely related to their training (Exhibit 4-4).

■ VIDA had no detectable impact on measures of job quality.

The evaluation tested for impacts on other indicators of job quality, such as working at least 32 hours per week, working in a job that offers health insurance, and working in a job with a supportive environment. The bottom panel of Exhibit 4-4 above shows that the study did not detect impacts of VIDA on any of these job quality indicators.

4.3 Summary of VIDA's Impacts on Earnings and Employment

VIDA had no positive impacts on its confirmatory outcome in the employment domain—average earnings in quarters 12 and 13—and it had a positive impact only on working in a job requiring mid-level skills. We explore possible reasons for the program's lack of success on improving labor market outcomes to date despite its educational success in Chapters 6 and 8.

⁴² Classified as O*NET Job Zone 3 or higher. O*NET defines occupations in Job Zone 3 as those that "need medium preparation." Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate degree. O*NET lists Medical Assistant as an example (O*NET 2019).

Outcome	Treatment	Control	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value
Employed at survey follow-up (%)	65.3	67.7	-2.4	3.6	-3.5	.754
Indicators of Career Pathways Employ	yment					
Employed and: (%)						
Earning \$17.50 per hour or more ^a	29.9	26.8	+3.1	3.5	+11.6	.191
Working in a job requiring at least mid-level skills ^ь	44.2	38.6	+5.6*	3.6	+14.5	.061
Working in a job closely related to training	44.8	39.7	+5.1	3.9	+12.8	.192
Indicators of Job Quality						
Employed and: (%)						
Working at least 32 hours per week	49.3	49.7	-0.4	3.9	-0.8	.916
Working straight day, evening, or night shifts	56.6	54.5	+2.1	3.9	+3.9	.596
Working in a job that offers health insurance	46.8	45.4	+1.4	3.9	+3.1	.712
Working in a job with supportive working environment ^c	37.5	35.2	+2.3	3.8	+6.5	.541
Sample size	386	338				

Exhibit 4-4: Three-Year Impacts on Employment and Career Progress

Source: PACE three-year follow-up survey.

^a \$17.50 per hour is the 60th percentile of the wage distribution for control group members who were employed at survey follow-up.

^b O*Net Job Zone 3 or higher.

^c Has job with good working environment in terms of social interactions, schedule flexibility, benefits, and advancement opportunities. *Note:* Secondary outcomes are bolded and statistical significance is based on one-tailed tests. Exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

5. Impacts on Other Life Outcomes

The career pathways theory of change as applied to VIDA hypothesizes that positive impacts on postsecondary education and training outcomes would lead to favorable impacts on earnings, which would translate into improvements in other life outcomes. This chapter examines career knowledge and supports (Section 5.1), family economic well-being (Section 5.2), child outcomes and parental engagement (Section 5.3), and childbearing and living arrangements (Section 5.4). The chapter closes with a brief summary. Analyses in this chapter show **few signs of impacts on other life outcomes** at the time of the three-year follow-up survey. Important exceptions are that VIDA had impacts on reduced childbearing and living with a spouse or partner for women.

5.1 Impact on Career Knowledge and Availability of Career Supports

This section reports VIDA's impacts on career knowledge and availability of career supports. Improvements to these outcomes are hypothesized to boost postsecondary educational attainment and career progress (Judkins et al. 2018).

■ VIDA had a positive impact on access to career supports, perhaps reflecting the strength of its counseling services for participants.

The treatment group reported an increase of 0.04 points on the access to career supports scale, but they experienced no detectable difference in a confidence in career knowledge scale (Exhibit 5-1). VIDA's positive impact on career supports could be related to the program's mandatory weekly counseling sessions that were held three times a month in a group setting and once a month individually. Topics for the group sessions ranged from academic to personal to career related. Although VIDA did not provide direct job development services, counselors served as a resource for helping participants navigate career-related topics and they connected participants to the colleges' career services departments. The fact that a large percentage of both treatment and control group members were already enrolled in specific occupational programs may explain why VIDA did not affect students' confidence in career knowledge.

Outcome	Treatment	Control	Impact (Difference)	Standard Error	Effect Size	<i>p</i> -Value
Confidence in career knowledge ^a	3.62	3.63	-0.01	0.04	-0.02	.613
Access to career supports ^b	1.83	1.79	+0.04**	0.02	+0.13	.042
Sample size	386	338				

Exhibit 5-1: Three-Year Impacts on Career Knowledge and Supports

Source: PACE three-year follow-up survey.

^a Confidence in career knowledge is seven-item scale based on average of responses to questions about whether the respondent knows which type of job, occupation, organization, and education is best for them, as well as their ability to make plans, identify abilities and challenges, and get help; response categories range from 1=strongly disagree to 4=strongly agree.

^b Access to career supports is six-item scale based on average of responses to questions on access to people in the education and training field or in occupations of interest to respondent; response categories range from 1=no to 2=yes.

Note: Secondary outcomes are bolded and statistical significance is based on one-tailed tests. Exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Effect Size" represents impacts in column 3 as a fraction of the pooled standard deviation of the treatment and control group. Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

5.2 Impact on Family Economic Well-Being

This section examines results for several measures of family economic well-being, including health insurance coverage, level of debt, signs of financial distress, and receipt of means-tested public benefits.

Except for amount of student debt, VIDA had no positive detectable impact on measures of family economic well-being.

There was no detectable impact on treatment group members' having health insurance coverage (Exhibit 5-2). About three fifths of both groups had health insurance at the time of the three-year follow-up survey.

VIDA reduced participants' student debt by slightly more than \$1,100, from \$4,416 to \$3,312 (Exhibit 5-2, second panel). This is consistent with the prominent role of enhanced financial support in the career pathways theory of change as applied to VIDA and the roughly \$7,400 per participant the program provided in financial assistance. The program had no detectable impact on other types of debt including parental student debt and unsecured debt of \$5,000 or more.

Despite reducing treatment group members' student debt, VIDA had no detectable impact on indicators of financial distress, such as participants' having a utility or a phone shut off, experiencing hunger, or having trouble paying bills (Exhibit 5-2, third panel). In addition, there was no detectable impact on household income or personal income. VIDA had no detectable impact on receipt of means-tested public benefits (Exhibit 5-2, bottom panel). This finding on benefits is consistent with the lack of impacts on either income or earnings.

Based on these results, it is somewhat surprising that the program did have a negative impact on the percentage of participants claiming the Earned Income Tax Credit (EITC) (Exhibit 5-2). Some 67 percent of the treatment group claimed the EITC, compared with 74 percent of the control group, a 7 percentage point reduction. This result might plausibly be due to treatmentrelated changes in family composition. Family structure is a factor in determining eligibility for and amount of EITC benefits. Because treatment group members were less likely than control group members to have had children since random assignment (see Section 5.4), they would be less likely to be eligible for the EITC.

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value
Has health insurance coverage (%) ^a	61.8	62.6	-0.8	3.8	-1.3	.582
Homeowner (%)	30.1	29.3	+0.8	3.5	+2.7	.819
Debt						
Average Student Debt Amount (\$)						
Participant's student debt ^b	3,312	4,416	-1,104*	719	-25.0	.062
Parental student debt	155	278	-123	95	-44.2	.197
Unsecured debt of \$5,000 or more (%) ^c	30.3	30.8	-0.5	3.8	-1.6	.898
Financial Status						
Any signs of financial distress (%) ^d	49.4	50.5	-1.1	3.9	-2.2	.384
Average monthly household income (\$)	2,997	2,991	+6	159	0.2	.972
Average monthly personal income (\$)	1,893	1,815	+78	120	+4.3	.518
Dependent on family (%)	22.7	22.9	-0.2	3.1	-0.9	.946
Receipt of Means-Tested Public Benefit	S					
Any means-tested public benefits (%)	57.7	60.5	-2.8	3.9	-4.6	.231
Earned Income Tax Credit claimant (%)	67.0	74.3	-7.3**	3.4	-9.8	.034
Sample size	386	338				

Exhibit 5-2: Three-Year Impacts on Family	Economic Well-Being
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Source: PACE three-year follow-up survey.

^a "Has health insurance coverage" means that either health insurance is offered by employer or, if not employed or not offered by employer, participant has health insurance coverage from another source.

^b "Student debt" measures debt accrued since random assignment.

^c Unsecured debt is debt other than student debt and secured debt (mortgages and title loans). Spousal debt is included.

^d "Any signs of financial distress" is a financial hardship measure. It is flagged if any of the following is reported: utility or telephone disconnects, delayed health/dental care, hunger, trouble paying bills, or not having enough money to make ends meet.

Note: Secondary outcomes are bolded and statistical significance is based on one-tailed tests. Exploratory outcomes are not bolded and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

5.3 Impact on Child Outcomes and Parental Engagement

This section reports impacts on several outcomes related to parental engagement and child well-being for study participants with children under age 18 at the time of random assignment. VIDA provided no direct services to children, but the program's theory of change hypothesizes that impacts might flow from parents' experiences with the program and increases in their educational attainment, employment, or income. Beyond the financial benefits that might come from greater earnings or income, it is possible that parents who pursue training, complete the training, and move into employment offer additional benefits to their children. First, their hard work can present parents as motivational role models. Second, if parents feel they have accomplished a life goal, then they might encourage their children to do well in school also. Finally, working in more stable jobs with regular hours could potentially benefit children. These imply a positive impact on children. Conversely, it is also possible that parents who are at school or working have less ability to engage with and supervise their children—a negative for children.

The three-year follow-up survey asked child outcome questions only of parents who had minor children at the baseline interview, and for some questions, only of parents of children in grades K-12 at the time of the survey. Because not all sample members surveyed were parents of young children, the parents' sample size is substantially smaller than the overall survey sample size (311 for all children and 251 for K-12 children versus 724 for full survey sample). As a result, the analysis is not well powered to detect even moderately sized impacts.⁴³

Nevertheless, there is one statistically significant difference in parent reports on their child. Nearly all treatment group members (94 percent) reported that they believe their children will graduate from college, 12 percentage points higher than for the control group (Exhibit 5-3). It is plausible that as VIDA built confidence in treatment group members' own college aspirations, evidenced by their continued enrollment and credential attainment discussed in Chapter 3, the program also caused parents to extend those aspirations to their children. In interviews, VIDA staff said that a longer-term objective of the program is to improve the education outcomes of future generations as a result of having observed a parent graduate from college.

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value
All Children (ages 0-18)						
Parent believes child will graduate college (%)	93.8	82.1	+11.7***	4.4	+14.3	.008
Parent almost always present for meals and other daily family activities (%)	24.0	28.6	-4.7	5.3	-16.4	.382
Parent self-efficacy for helping child navigate school (1-6 scale) ^a	3.37	3.33	+0.03	0.05	+0.9	.504
Sample size	177	134				
Children Grades K-12						
Child repeated any grades (%)	5.5	10.7	-5.2	3.5	-48.6	.137
Days child late for school last month (#)	0.68	0.64	+0.05	0.19	+7.8	.812
Days child absent from school last month (#)	1.19	1.16	+0.03	0.23	+2.6	.897
Sample size	146	105				

Source: PACE three-year follow-up survey.

^a Parental self-efficacy based on seven items (e.g., "I know how to help my child in school") with response categories ranging from 1=disagree very strongly to 6=agree very strongly. See Appendix C for more details on child outcome measures.

Note: All the subgroup analysis is exploratory and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]). For the scale variable (parent self-efficacy), we report effect size rather than relative impact. "Effect Size" represents impacts in column 3 as a fraction of the pooled standard deviation of the treatment control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

VIDA had no detectable impact on other parental engagement and child outcomes measures. At the time of the three-year survey, about a quarter of parents in the treatment and control groups reported being present for meals and other daily family activities (Exhibit 5-3, top panel). The

⁴³ Our analysis plan (Judkins et al. 2018) noted that we would report impacts for outcomes for the allgrade and K-12 samples in PACE programs where we had at least 200 children.

parent self-efficacy scale, which measures the degree to which parents believe they are able to help their children in school, was also similar for both groups. The study did not detect statistically significant differences in parental reports of child outcomes for children in kindergarten through grade 12 (Exhibit 5-3, bottom panel).

5.4 Impact on Childbearing and Living Arrangements

This section presents findings on women's childbearing (defined as having had a child or being pregnant at the time of survey completion) and living arrangements (defined as living with a spouse or partner, or with a parent) for both men and women. In the short-term VIDA report, we observed lower levels of childbearing among women in the treatment group than in the control group. This childbearing impact was not hypothesized in the career pathways theory of change as applied to VIDA, but there is some evidence from other studies supporting this pattern (Buckles 2008; Brand and Davis 2011). In addition, in the short-term report, we found no detectable impacts on treatment group members' living arrangements.

The impact of women's decreased childbearing identified in the short-term report persisted through the three-year follow-up.

Three years after random assignment, 22 percent of treatment group women versus 31 percent of control group women (a 9 percentage point decrease) had had a child since study enrollment or were pregnant at survey completion (Exhibit 5-4).⁴⁴ It appears that the impact was mostly driven by women having fewer first children, because in the same period, treatment group members were 9 percentage points more likely than the control group to report having no children living in the household (43 percent versus 34 percent) (Exhibit 5-4, bottom panel).

Treatment group members were less likely to be living with a spouse or partner than were control group members.

After three years, treatment group members were less likely to be living with a spouse or partner (46 percent versus 55 percent) (Exhibit 5-4). This phenomenon was primarily driven by nonformation, rather than break-up of existing relationships. Thirty (30) percent of those in the treatment group who were not living with a spouse or partner at baseline were doing so at the three-year follow-up, compared with 41 percent of the control group. Of treatment group members who were living with a spouse or partner at baseline, 16 percent were no longer doing so at three years versus 14 percent in the control group (not shown).

Research suggesting that college enrollment has higher costs for women than men with respect to marriage (see introduction to Chapter 6 for more detail) led us to conduct subgroup analyses to examine whether VIDA's living arrangements impact held for both women and men.

⁴⁴ The three-year survey did not ask men whether they had become a parent.

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value
Childbearing (women only)						
Had child since random assignment or currently pregnant (%)	22.1	31.5	-9.4**	4.2	-29.8	.025
Sample size	271	244				
Living Arrangements						
Number of children currently living with	respondent (%)					
0 children	43.1	33.8	+9.3***	3.3	+27.5	.005
1 child	17.2	18.9	-1.7	3.1	-9.0	.578
2 children	21.9	24.6	-2.8	3.4	-11.4	.413
3+ children	17.8	22.7	-4.9*	2.9	-21.6	.091
Living with spouse/partner (%)	45.8	54.6	-8.7**	3.5	-15.9	.014
Living with parents (%)	28.8	28.2	+0.6	3.4	+2.1	.858
Sample size	386	338				

Exhibit 5-4: Three-Year Impacts on Childbearing (Women Only) and Living Arrangements

Source: PACE three-year follow-up survey.

Note: "Relative impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]). "Children" refers to children age 17 or younger, living with respondent at least half the time, for whom the respondent or spouse/partner is their legal guardian.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

Impacts on living arrangements differed between women and men, including both living with a spouse or partner (lower for women) and living with parents (higher for women).

Treatment group women were 14 percentage points less likely than control group women to be living with a spouse or partner, whereas there was no similar impact detected for men (Exhibit 5-5). This difference in impacts between women and men was statistically significant, suggesting that the full sample impact on living arrangements is accounted for by reductions among treatment group women.

Although we did not detect impacts on living with parents for the full sample, impact estimates on this measure for men and for women were statistically significantly different (Exhibit 5-5). The estimate for men was -11 percentage points and close to statistically significant (p = .11) despite the men's small sample size. This result raises the question of whether other differential gender impacts might have led to VIDA affecting men's living independently of their parents more positively than women's.

The positive impact for the full sample on living in a household with no children was driven by an 11 percentage point increase for women in such households (Exhibit 5-5). There was no detectable impact for men. Although the difference in impacts was not statistically significant, VIDA's impact for women on this outcome is consistent with its impact on treatment group women's childbearing.

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value for Effect	<i>p</i> -Value for Differential Effect by Gender
Living with Spouse/Partner (%)							.027
Men	63.9	61.5	+2.4	6.0	+3.9	.687	
Women	37.9	51.7	-13.8***	4.3	-26.7	.001	
Living with Parents (%)							.041
Men	24.0	34.6	-10.6	6.6	-30.6	.107	
Women	30.5	25.6	+4.9	3.9	+19.1	.203	
Living with No Children (%)							.176
Men	54.3	52.4	+2.0	6.1	+3.8	.743	
Women	37.6	26.2	+11.4***	3.7	+43.5	.002	
Sample size, men	115	94					
Sample size, women	271	244					

Exhibit 5-5: Three-Year Impacts on Living Arrangements, by Gender

Source: PACE three-year follow-up survey.

Note: All the subgroup analysis is exploratory and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]). "Children" refers to children age 17 or younger, living with respondent at least half the time, for whom the respondent or spouse/partner is their legal guardian. Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; ** 10 percent level.

5.5 Summary of VIDA's Impacts on Other Life Outcomes

VIDA had few detectable impacts on other life outcomes. The program did reduce participant's student debt consistent with its having provided substantial financial assistance. The lack of many other detectable impacts is not surprising given the lack of detectable earnings and employment gains. Some of the positive impacts described in this chapter, such as parents' belief that their children will graduate from college, likely stem from the confidence that treatment group members gained in their ability to succeed in postsecondary education. Similarly, VIDA's reduction in EITC use likely resulted from reduced childbearing among treatment group women.

Most striking and unanticipated were VIDA's impacts on women's childbearing and living arrangements, and the lack of detectable impacts for men. These impacts raise the question of whether there were differential gender impacts on education or employment that might explain these results. In addition, although not statistically significant for men, the more positive impact on not living with parents for men than women also suggests the possibility of other gender differential impacts. We explore these possibilities in Chapter 6.

6. Impact on Education and Employment-Related Outcomes, by Gender

The previous chapter reported that VIDA reduced childbearing and living with a spouse or partner for women but not men, and the differences in impacts on living arrangements were statistically significant.⁴⁵ This chapter explores a possible contributing factor to these differential impacts: gender differences in college enrollment in Years 3 and 4. The chapter also explores other gender differences in educational impacts, as well as how educational impact differences might contribute to divergent impacts on men's and women's employment outcomes. The chapter closes with a brief discussion of how these gender differences might be plausibly interrelated.

Basic research studies have linked postsecondary education to postponed marriage and childbearing, particularly among women (Becker 1993; Brand and Davis 2011; Aughinbaugh et al. 2013). The usual explanation is that investments both in one's human capital (including postsecondary education) and in family require substantial commitments of time and energy, and therefore the different investments can be in competition. The opportunity costs that partnering and childbearing can have on college and career may be larger for women than men, because traditionally women have been disproportionately tasked with domestic responsibilities. Thus, an intervention that substantially increased college enrollment among both women and men might induce a greater delay in marriage/partnering and childbearing for women than men. Furthermore, if impacts on enrollment were larger for women than men, gender differences in childbearing and marriage/partnering might be even larger.

To explore this hypothesis, we conducted exploratory analyses that we had not pre-specified.⁴⁶ Specifically, this chapter reports impacts on college enrollment and credentials by gender. The findings suggest the possibility of **larger and longer positive impacts on enrollment for women than men**. They also suggest the possibility of **differential impacts on the kinds of credentials earned** by women versus men.

In addition to helping to explain the observed differences in impacts on living arrangements and childbearing, the enrollment findings raise the possibility of gender differences in impacts on employment and earnings. That is, if impacts on educational enrollment continue longer for women than men, then perhaps increases in employment and earnings will take longer, as well.

⁴⁵ The three-year follow-up survey asked women but not men about having a child since random assignment, so we cannot examine gender differences in having a child.

⁴⁶ The exploratory nature of this chapter, i.e., that the specific outcomes and subgroups were not prespecified as confirmatory or secondary hypotheses, implies that readers should not interpret these impact estimates as more than suggestive. The strongest evidence for whether VIDA had education and employment impacts is addressed in the confirmatory impact estimates presented in Chapters 3 and 4.

To assess the latter possibility, which a planned six-year report will examine more definitively, this chapter also presents current estimates of impacts on employment and earnings by gender.

Some analyses in this chapter are based both on the full sample of 679 women and 279 men; other analyses are based on the early cohort subsample for whom the evaluation has longer follow up. This sample has 545 women and 219 men and is thus roughly 80 percent of the full sample. Small sample sizes mean any gender differences need to be quite large to be statistically significant. In this chapter, when differences are not statistically significant but show a consistent pattern of substantial differences and are close to significant, we identify the pattern and treat it as suggestive evidence.

6.1 Impacts on Education Outcomes by Gender

This section examines impacts on college outcomes by gender, beginning with impacts on *any college enrollment*. Because receipt of a lower-level credential (certificate) is more plausibly followed by subsequent enrollment than is a higher-level credential (associate degree), we also explore differential impacts on the kinds of credentials that men and women received.⁴⁷

Point estimates of impacts on educational enrollment are larger for women than men in Years 3 and 4, although only the Year 3 difference in impacts between women and men is statistically significant.

Estimated impacts on any enrollment suggest larger impacts for women than men in Years 3 and 4 (Exhibit 6-1). In Year 3, the difference in impact between women and men is statistically significant (.099), but just barely below the conventional statistical cut-off of .10. In Year 4, the difference (.146) is moderately above that cut-off.⁴⁸

We explored the possibility that a difference in VIDA's enrollment impacts for women and men was related to the program having differential impacts on the kind of credentials (i.e., degrees versus certificates) women and men earned. We find evidence of differential impacts for both certificates and degrees (which potentially relate to employment outcomes discussed in the next section).

⁴⁷ In this chapter we use *degree* to mean "associate degree or higher."

⁴⁸ From the perspective of presenting longer follow-up, it would have been preferable to use the early cohort to cover five years. However, there are indications that the later cohort's enrollment impacts differ from those of the early cohort, so the early cohort doesn't represent the full sample regarding effects on any enrollment.

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value for Effect	<i>p</i> -Value for Differential Effects by Gender
Any College Enrollment in Yo	ear 3 (%)						.099
Male	30.5	33.6	-3.1	5.7	-9.3	.591	
Female	47.5	39.3	+8.2**	3.8	+20.9	.033	
Any College Enrollment in Ye	ear 4 (%)						.146
Male	20.2	16.4	+3.8	4.7	+23.2	.422	
Female	34.2	22.0	+12.2***	3.5	+55.5	<.001	
Sample size, women	333	346					
Sample size, men	145	134					

Exhibit 6-1: Impacts on Any Enrollment in Years 3 and 4, by Gender

Source: VIDA partner college records.

Note: Statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

■ Impacts on earning a degree suggest larger effects for men than women.

After three years, VIDA had a 13 percentage point impact on associate or higher degrees for men, compared to 5 percentage points for women, as shown in Exhibit 6-2.⁴⁹ However, the difference in impacts between men and women is not statistically significant (p = .176), so this is only suggestive evidence that VIDA had larger impacts on degrees for men. By the end of four years (not shown), the impacts for both men and women were significant (15 percentage points for men, 6 percentage points for women), but the differential impact between men and women (p = .163) was still not significant at conventional levels.

The suggestive larger impact for men on degrees is not a result of men enrolling in VIDA closer to completion of a degree program or women being more likely than men to initially enroll in degree programs (which are longer than certificate programs). If treatment group men were enrolled further along, we would expect them to be earning degrees at a higher rate than women. In contrast, if treatment group women were more likely to be in degree programs, then we would expect them to be earning degrees at a higher rate than men. However, as shown in the top panel of Exhibit 6-2, treatment group men and women earn degrees at very similar rates by the end of three years (40 percent versus 42 percent). The subgroup difference is driven by control group men having lower levels of degree receipt than control group women.

⁴⁹ We primarily focus on outcomes at three-year follow-up, because they align temporally with the survey-based employment outcomes that are analyzed in the next section.

Outcome	Treatment Group	Control Group	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value for Effect	<i>p</i> -Value for Differential Effects
Any Associate or Higher Degree							.176
Men	40.2	26.9	+13.3**	5.3	+49.4	.012	
Women	41.5	36.7	+4.8	3.5	+13.1	.175	
Received Certificate Taking 1 or More Years of College (Excludes Degrees) by Year 3 (%)							.042
Men	19.8	25.4	-5.6	5.2	-22.0	.857	
Women	28.1	21.1	+7.0**	3.3	+15.6	.018	
Sample size, women	333	346					
Sample size, men	145	134					

Exhibit 6-2: Impacts on Credentials at Three Years, by Gender

Source: VIDA partner college records.

Note: Statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

VIDA had larger impacts for women than men on earning certificates requiring a year or more of college.

By the end of three years, VIDA had a 7 percentage point impact on receiving a certificate requiring a year or more of college for women but no detectable impact for men (Exhibit 6-2 above). The 13 percentage point difference in impacts between women and men is statistically significant.

The findings in this section provide suggestive but not definitive evidence that VIDA affected women's and men's education outcomes differently. There were larger positive enrollment impacts in Years 3 and 4 for women than men. There were also larger impacts on receipt of certificates requiring a year or more of college for women, whereas there were larger impacts on receipt of an associate degree for men. Because, all else equal, degrees have more value in the labor market than certificates, the next section examines possible differences by gender in employment-related impacts and how they might relate to differences in educational impacts by gender.

6.2 Impacts on Employment-Related Outcomes by Gender

This section examines gender differences in impacts on employment and earnings. Past studies have shown that college enrollment typically reduces time spent working and total earnings (Roder and Elliott 2019; Abel and Deitz 2014). Other studies find that returns to associate degrees are typically greater than returns to certificates (Belfield and Bailey 2017; Dadgar and Trimble 2015). These studies, along with the findings on gender differences in enrollment and in the type of credential earned, raise the possibility that VIDA could have differential impacts on employment-related outcomes.

Specifically, the findings of longer sustained enrollment impacts and smaller impacts on degrees among women than among men lead to an expectation of a longer period of reduced earnings for women than men, as well as the earlier emergence of positive impacts for men moving into higher-level jobs than for women.

■ For the early cohort, there is suggestive evidence that trends in earnings impacts over the five-year follow-up period are more favorable for men than women.

There are no statistically significant differences in earnings impacts for women and men after the first year (Exhibit 6-3) and no significant differences in earnings impacts between women and men in any year (not shown).⁵⁰ However, because the trend in earnings impacts for men appeared to be more positive than for women, we tested for a significant difference in the trends in impacts. We found that the slope for men was significantly more positive (p = .062) than the slope for women. This could indicate that men's earnings impacts may be recovering from an initial negative impact from forgone earnings to invest in education, whereas this pattern has not emerged for women. However, although the upward trend in men's earnings estimates over five years appears to be more favorable for men than women, the difference in total earnings impact over five years for men and women is not statistically different and the men's estimated impact is more negative than for women (approximately negative \$7,300 for men versus negative \$4,000 for women).

⁵⁰ In this section we use the early cohort's five-year follow-up, because unlike the enrollment impact findings, there are no significant or close-to-significant differences in impacts between the early and late cohort.



Exhibit 6-3: Impacts on Annual Earnings over Five Years, by Gender

Source: National Directory of New Hires.

Note: Statistical significance is based on two-tailed tests. Sample size for men is 114 treatment group and 105 control group. Sample size for women is 267 treatment group and 278 control group.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

As of the three-year follow-up, VIDA appears to have increased the wage and skill level of men's jobs but not women's.

At the time of the three-year participant follow-up survey, there was no detectable increase in earnings for the full sample or for men or women separately. However, there was a positive impact on employment in higher-skilled jobs for the full sample. To explore whether impacts on the types of jobs that men and women held differed in a way that was consistent with larger impacts for men on degrees earned, we examined impacts on favorable job characteristics reported in the survey. If the job characteristic findings were consistent with the larger impact for men on degrees, we would expect to see impacts on relevant features of men's jobs at three years and smaller or no impacts on those features of women's jobs at three years.

Impacts on being employed in jobs paying \$17.50 or higher per hour and on jobs requiring at least mid-level occupational skills are both 13 percentage points for men, but close to zero for women. The difference in men's and women's impacts is statistically significant for the high hourly wages, but not for jobs with mid-level skills (Exhibit 6-4). The impacts for men on these two measures are consistent with the fact that treatment group men also experienced a comparable impact on associate degree receipt at the three year follow-up point. These differential impacts suggest that VIDA may be beginning to have a positive impact for men on some elements of labor market success but is not doing so for women.

Outcome	Treatment	Control	Impact (Difference)	Standard Error	Relative Impact	<i>p</i> -Value for Effect	<i>p</i> -Value for Differential Effects by Gender
Employed at \$17.50 per Hour or Above (%)							.068
Men	28.4	15.7	+12.6**	6.0	+80.3	.034	
Women	30.7	31.3	-0.6	4.2	-1.9	.897	
Currently Employed in a Job Requiring at Least Mid-Level Skills (%)							.201
Men	33.9	21.1	+12.8**	6.0	+60.7	.035	
Women	49.0	45.8	+3.2	4.4	-7.0	.468	
Sample size, men	115	94					
Sample size, women	271	244					

Exhibit 6-4: Impacts on Selected Job Characteristics at Three Years, by Gender

Source: PACE three-year follow-up survey.

Note: All the subgroup analysis is exploratory and statistical significance is based on two-tailed tests. "Relative Impact" represents impacts in column 3 as a fraction of the corresponding control group mean (i.e., 100 × [impact/control group mean]).

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

Like the larger impacts for men on earning associate degrees or higher, the larger impacts for men on the wage and skill levels of jobs are due to control group men's levels being lower than control group women's levels. For example, treatment group women are almost 50 percent more likely than treatment group men to be working in a job requiring at least mid-level skills (49 percent versus 34 percent) and slightly more likely to be working at \$17.50 or higher (31 percent versus 28 percent).

6.3 Discussion and Summary

VIDA's positive impacts on college enrollment for women are consistent with the hypothesis that those enrollment impacts contributed to reductions in the likelihood of childbearing and the likelihood of living with a spouse or partner. That is, through the three years following random assignment, treatment group women were more likely than control group women to choose enrollment in school, potentially leaving less time and energy for romantic relationships or having children. Impacts on enrollment in later years of follow-up and on childbearing and living arrangements both occur only for women. In addition, VIDA's positive impacts for women on earning certificates requiring a year or more of college, which were more likely to be followed by college enrollment than were earning degrees (on which men's positive impacts occurred), appear to have played a role in women's continuing enrollment impacts.

We did not find a positive impact for men or women on earnings, but we did find the trajectory of earnings impacts for men was significantly steeper than for women. This is consistent with the possibility, formulated in the introduction to this chapter and supported by research on the opportunity costs of college enrollment, that a longer period of enrollment impacts lengthened the period of deferred earnings for women compared to men. The contrasting trends of earnings impact estimates for men and women are also consistent with the possibility that the more-positive and earlier impacts on men's degrees equipped more treatment than control group men

to take better-paying jobs sooner. For women, the impact on degrees appears to be smaller and to arrive later and is consistent with a flatter trend in earnings impacts.

The differences in educational and employment impacts for women and men are also consistent with the gender differences in impacts on living with a parent identified in Chapter 5. By the end of three years, treatment group men had earned more degrees and were no more likely to be currently enrolled in school than were control group men. Consistent with the impact on degrees, men in the treatment group were more likely to be working in higher-wage and higher-skilled jobs than were control group men. Plausibly these educational and employment differences led more men in the treatment group than the control group to form independent households. Hypothetical mechanisms for men's behavior could be financial (e.g., no longer needing to pay tuition) or social (e.g., not wanting to be dependent on parents having achieved a higher-level job and no longer being a student).⁵¹ For treatment group women, impacts on degrees and higher-wage and higher-skilled jobs had not emerged after three years. In addition, these women were still experiencing substantial enrollment impacts. This pattern is consistent with there being no impact on treatment group women forming independent households.

Enrollment impacts in Years 4 and 5 may have depressed earnings impacts for women and because women are approximately 70 percent of the full sample, their impacts dominate the full sample results. If the enrollment impacts in Years 3 and 4 for women result in a larger positive impact on degrees and the enrollment impact (and any related forgone earnings) fades, there may be a positive earnings impact for women and the full sample with longer follow-up. Future PACE research will determine whether such an earnings impact emerges with another two years of follow-up, but even longer follow-up may be warranted.

⁵¹ We have no direct evidence to support either mechanism. Specifically, with respect to the financial possibility, at three years treatment group men were no more likely than control group men to be working or earning more money.

7. Cost Analysis

This chapter presents the costs of services and postsecondary education and training received by VIDA treatment group members and by control group members. It then calculates the total cost of VIDA as the difference between treatment group and control group costs. For two reasons, this report documents VIDA's costs. First, should earnings impacts materialize in subsequent quarters of data collection, the cost estimates presented here will serve as the basis for a full cost-benefit analysis.⁵² Second, documenting intervention costs allows future meta-analyses of education and workforce training initiatives to include the intervention costs along with impact estimates in attempts to draw conclusions on the wider body of research evidence.

For treatment group members, services are provided by VIDA and include group and individual counseling sessions and College Prep Academy courses at local colleges. For control group members, comparable costs are estimated for any similar services they receive in the community.⁵³ VIDA also provides treatment group members financial support for continuing their education (the majority of which is tuition and fee assistance). Providing this is a cost to the VIDA program, but in analyzing costs to society as a whole, the financial assistance is a transfer, not a net cost.

For both treatment and control groups, postsecondary education and training includes the total cost of instruction for all enrollment in the first four years after random assignment.⁵⁴

The total cost of VIDA is the summed cost of program services and postsecondary education and training for treatment group members minus the summed cost of program services and postsecondary education and training for control group members.

The **primary focus of the cost analysis is the cost to society as a whole**—the value of all the goods and services used to provide the additional program services and postsecondary education and training that treatment group members received relative to control group

⁵² The estimates are based on data collected during the PACE and CPIO studies. Documenting the costs here puts the estimates on record while the cost data are available and our questions could be addressed with VIDA staff.

⁵³ As detailed in Appendix I, the estimates of control group service receipt are approximated based on findings from the *Implementation and Early Impact Report* (Rolston et al. 2017) and consultation with that report's authors.

⁵⁴ Costs reported in this analysis do *not* include most indirect costs to participants of program participation, most notably, of foregone earnings (as participation implies lower concurrent levels of employment). See Chapter 4, especially Exhibit 4-2, for an analysis of earnings over the full follow-up period. The exception is for a portion of indirect costs of postsecondary education and training. Because VIDA provides financial assistance to treatment group members to offset some of those indirect costs (e.g., books and supplies, transportation, childcare, and living expenses), a proportional amount of such costs to control group participants is included in postsecondary education and training costs.

members. However, **the analysis also reports how much it costs VIDA** to provide program services and assistance, and (in Appendix I) **how costs accrue to four stakeholder groups**: participants, the federal government, state and local governments, and the rest of society.

Appendix I provides detailed information on data sources and methods used to develop these cost estimates. In brief, data sources include cost data collection interviews with VIDA staff, which included a review of program financial records; administrative records of financial assistance provided to VIDA participants; VIDA partner college records; PACE 20-month and three-year follow-up surveys; and Integrated Postsecondary Education Data System (IPEDS) data. In general, program costs are estimated at the program level by determining the total expenditures needed to provide services and dividing by the number of individuals eligible to receive services (e.g., the treatment group for treatment group costs). Costs of postsecondary education and training are estimated at the individual level as a per-unit cost of education multiplied by education units obtained. ⁵⁵

Section 7.1 reports the cost of VIDA program services and alternatives accessed by the control group. Section 7.2 reports costs of postsecondary education and training. Section 7.3 reports the combined total cost summed over the categories. Appendix I provides additional detail and supplementary exhibits.

7.1 VIDA Program Services

The cost of VIDA program services per treatment group member was \$3,649. Additionally, VIDA provided \$7,421 of financial assistance per treatment group member to support postsecondary education and training (Section 7.2), resulting in a total cost from the VIDA program perspective of \$11,070. Exhibit 7-1 allocates these costs by category, with a detailed breakdown for costs within the financial assistance category. The counseling, assessments, the College Prep Academy, and other services (besides financial assistance) cost \$2,799 per treatment group member.⁵⁶ Administrative costs were \$850 per treatment group member.

The VIDA program provided treatment group members, on average, \$7,421 of financial assistance. The largest financial assistance category was tuition and fees, at \$5,252.⁵⁷

⁵⁵ That is, observed education spells for each individual at each institution are multiplied by institutionlevel costs reported in IPEDS data, and individual-level costs are calculated as the sum of all such spell costs. The resulting individual costs are then modeled in the same regression framework used in the impact analysis.

⁵⁶ See Section 1.1 in this report and Chapters 3 and 4 of the earlier VIDA *Implementation and Early Impact Report* (Rolston et al. 2017) for a complete listing and description of VIDA program services, all of which are included in this cost.

⁵⁷ This amount includes assistance provided in the first 48 months after random assignment, the longest window among outcomes in Chapter 3 for which we have data on all study participants. As noted in Section 3.3, 95 percent of participants had exited VIDA by 48 months, with average participation of about 18 months.

Category of Costs	Cost per Treatment Group Member (\$)
VIDA Program Services ^a	
Services-total	3,649
Administration	850
Counseling, assessments, College Prep Academy, other services	2,799
VIDA Program Financial Assistance ^b	
Financial assistance—total	7,421
Tuition and enrollment-related fees	5,252
Books/tools/supplies/tutoring/other fees	1,096
School-related transportation and childcare	986
Living expenses (clothing, meals, housing, other)	87
Total cost from VIDA program perspective ^c	11,070

Exhibit 7-1: VIDA Program Services Cost per Treatment Group Member

Source: PACE cost data interviews and VIDA program financial records; VIDA administrative records of financial assistance, with data reported for those treatment group members for whom VIDA reported any expenditures during the four years after random assignment.

^a This is the cost to society as a whole of VIDA program services provided to the treatment group. It is used to calculate the cost difference of program services that is a component in the total cost of VIDA.

^b These are transfers from the VIDA program perspective either to colleges (tuition and fees) or to participants that are included in costs of postsecondary education and training. The exception is living expenses, which are a transfer from the VIDA program to participants, which net out from the perspective of society as a whole.

^c This represents the expenditure per treatment group member by the VIDA organization for both program services and all types of financial assistance.

The cost analysis estimates costs of any services similar to those provided by VIDA that control group members used. Though control group members did not have access to the VIDA program, they did engage in training, sometimes at the same colleges, and they could receive advising and financial assistance services similar to VIDA's from their college and elsewhere in the community. Local college and university staff played a key role in study recruitment; thus, many of the study participants, including control group members, were already in college when they were recruited for the study. Indeed, more than 80 percent of control group members had at least some college enrollment in the first 6 months after randomization (see Exhibit 3-3). The costs of any services provided by a college or training institution are included in the postsecondary education and training costs estimated in Section 7.2. Treatment and control group members could access job search supports from other community providers (e.g., American Job Centers and Texas Department of Assistive and Rehabilitative Services), but the case management at these providers was not as extensive as VIDA's.⁵⁸

Given these factors, the cost analysis assumes that the control group used only slightly more of these outside supports in the community (i.e., not included in postsecondary education and training costs) than the treatment group did. The cost analysis approximates that the average

⁵⁸ As documented in Section 3.1.3 of the *Implementation and Early Impact Report* (Rolston et al. 2017).

cost per control group member of the alternative services was \$48 more than for treatment group members using these community services.⁵⁹

The VIDA program services cost difference (treatment – control) was \$3,601 per participant.

The VIDA program services cost difference is \$3,601. This is the difference between VIDA program services cost per treatment group member (\$3,649) and the estimated cost per participant of alternative services accessed by control group members beyond what treatment group members accessed (\$48).

7.2 Postsecondary Education and Training

As intended, and documented in Chapter 3, VIDA increased the amount of postsecondary education and training that treatment group members obtained relative to the control group. In addition to that increase, Section 3.2 also reports that VIDA participation increased college enrollment even after treatment group members exited the VIDA program. Any changes in enrollment change the costs to society.⁶⁰ This section documents the costs of enrollment in education and training, incorporating the financial assistance that VIDA provides its participants to help them stay in school.

Outcome	Cost Per Treatment Group Member (\$)	Cost Per Control Group Member (\$)	Cost Difference (\$)
Instructional cost of FTE enrollment in four years after random assignment) ^a	14,551	11,838	2,713
Incidental costs of attendance (books, supplies, tutoring, other fees; transportation and childcare) ^b			
Supported by VIDA	2,082	-	-
Out-of-pocket ^b	-	1,683	399
Cost of postsecondary education and training	16,633	13,521	3,112

Exhibit 7-2: Cost of Postsecondary Education and Training

Source: VIDA partner college records; PACE 20-month and three-year follow-up surveys; Integrated Postsecondary Education Data System. ^a VIDA program tuition and fee assistance to treatment group members is a revenue source that covers some of these costs, at an average of \$5,373 per treatment group member.

^b This captures only costs of attendance for which VIDA provided financial assistance, and a proportional estimate (to FTE months enrolled) of the same costs incurred by control group members. Comprehensive costs of attendance (e.g., including all living expenses) are not included.

⁶⁰ As discussed in Appendix I, these costs can be borne by participants (tuition and fees), the federal government (Pell grants), state and local government (funding of public postsecondary institutions), and to other members of society (donations from private donors).

⁵⁹ This approximation captures control group member access to community resources beyond that of treatment group members (i.e., the cost difference of community resource use), under the assumption that VIDA replaced some use of community resources by treatment group members. See Appendix I-2 for information on this estimate.
Exhibit 7-2 reports the cost of postsecondary education and training.⁶¹ Treatment group members' enrollment in the first four years after random assignment result in a total cost of instruction of \$14,551, while control group members' enrollment costs \$11,838, which results in a cost difference of \$2,713.⁶² VIDA pays tuition and enrollment-related fees for treatment group members (\$5,252; shown in Exhibit 7-1) directly to colleges, a transfer that provides revenue to support the treatment group members cost (see perspective analysis in Appendix I). VIDA also provides \$2,082 of financial assistance to treatment group members to support incidental costs of attendance (shown in Exhibit 7-1 by cost category).⁶³ These out-of-pocket costs were also faced by control group members, but without VIDA assistance; the cost analysis estimates \$1,683 in such costs per control group member. This results in a cost difference of \$399.⁶⁴

■ The VIDA education and training cost difference (treatment – control) was \$3,112 per treatment group member.

Summing the costs of instruction and the incidental costs of attendance, the cost difference of postsecondary education and training is \$3,112 per treatment group member.

⁶¹ To quantify costs of postsecondary education and training, this analysis estimates the cost of enrollment (based on FTE months). Among the postsecondary education and training outcomes, enrollment is most closely aligned with costs. Other postsecondary outcomes, which had larger impact estimates in Chapter 3, measure credentials or credits. However, these outcomes may not relate directly to costs for multiple reasons, including that not all students attempting a credential obtain it, whether or not a cost is incurred. Costs of tests required for credentialing that VIDA paid for as financial assistance are included among the items in the *cost of attendance* category.

⁶² As documented in Appendix I, the unit cost per FTE enrollment month is based on the institution-wide average instructional cost. This measure does not account for the possibility that the training that VIDA participants enrolled in (nursing and allied health professions, education, social services, and specialized trades—see Section 1.2.1) may have had higher costs of instruction (and tuition) than the institution-wide average. If so, the cost difference reported here may understate actual costs of VIDA.

⁶³ Financial assistance for living expenses (which is shown separately in Exhibit 7-1) is not included as a cost of postsecondary education and training. In the perspective analysis, Appendix Exhibit I-1 includes these amounts as transfers from VIDA to participants.

⁶⁴ Appendix Exhibit I-2 builds up these calculations.

7.3 Total Cost of VIDA

This section sums program services and postsecondary education and training costs to calculate the total, per-participant cost of VIDA.

■ The total per-participant cost of VIDA is \$6,713.

Exhibit 7-3 shows the calculation of total costs of VIDA. Measured in terms of monetized costs and compared to other cost analyses of workforce training programs, the VIDA costs are comparable to other intensive sectoral training programs.⁶⁵

Exhibit 7-3: Total Cost of VIDA

Outcome	Cost Per Treatment Group Member (\$)	Cost Per Control Group Member (\$)	Cost Difference (\$)
VIDA program services and control group alternatives in the community	3,649	48	3,601
Cost of postsecondary education and training	16,633	13,521	3,112
Total cost of VIDA	20,282	13,569	6,713

Source: Exhibits 7-1 and 7-2.

The costs reported in Exhibit 7-3 are for society as a whole. Considering costs from the participant perspective provides additional insight into the program. As part of the eligibility and enrollment process (detailed in Chapter 1), VIDA reviewed participants' income and total living expenses along with costs of education and training (tuition, fees, supplies) and financial aid in determining the amount of financial assistance, and specifically tuition and fee assistance provided.

At the colleges/universities that the treatment and control members attended, the average financial aid exceeded tuition and fees owed. Financial aid in excess of tuition and fees are remitted to students to help cover living expenses while enrolled in college. VIDA provided tuition and fee assistance by paying colleges directly, so Pell grants received in excess of tuition and fee costs paid by VIDA could be used for living expenses. Approximately 60 percent of treatment group members enrolled in postsecondary education and training received Pell grants, as reported in VIDA financial data. So the cost analysis estimates that 60 percent of both treatment group and control group participants that enrolled received support from Pell and

⁶⁵ A recent study of the relatively low intensity, national Workforce Investment Act and Workforce Innovation and Opportunity Act programs (Fortson et al. 2017) found per-person costs ranging from \$1,127 (core program, which does not include occupational training) to \$2,376 (full program). Figures are adjusted for inflation to 2014 dollars. Recent cost estimates of more intensive sectoral training programs include a cost per treatment group of \$11,156 for Project QUEST program services and assistance (Roder and Elliot 2019) that is very close to our estimate for VIDA. Total cost per treatment group member after three years for programs studies in the WorkAdvance demonstration ranged from \$6,231 to \$7,929 (Hendra et al. 2016), with cost differences ranging from \$3,581 to \$6,046.

other grants, but because of VIDA assistance, treatment group members could use more of the Pell grants could be used for other living expenses.

Accounting for these remitted funds, the cost analysis estimates that treatment group members have a -\$5,596 cost of enrollment. That is, enrollment results in a substantial amount of remitted funds that can be used for living expenses.

Tuition paid by the 40 percent of control group members who do not receive Pell grants (or VIDA assistance) is estimated based on VIDA tuition assistance to the treatment group and on Integrated Postsecondary Education Data System data, as detailed in Appendix I. Accounting for both financial aid and tuition, the cost analysis estimates that control group members have a -\$285 cost of enrollment (i.e., a small amount of remitted funds). VIDA financial assistance for incidental costs of attendance and living expenses adds an additional \$1,771 to treatment group resources relative to the control group. So VIDA results in \$7,082 more funds for the treatment group.

Appendix I provides additional information about how VIDA costs vary across stakeholder perspectives and cost analysis methods.

8. Conclusion

VIDA seeks to support participants in college programs leading to credentials for occupations that enable them to obtain higher-wage jobs that are in demand in the local labor market. As discussed in Chapter 1, VIDA provided an extensive array of services and financial support to help participants obtain their targeted credential. In our cost analysis, we estimate that VIDA spent \$11,070 per treatment group member providing services and direct financial assistance over the four years following program enrollment. After adding in costs of postsecondary education and training not paid for by VIDA and subtracting comparable control group costs, the total cost to society was \$6,713.

This chapter briefly summarizes the report's key findings and provides a possible explanation for the findings. We then characterize the magnitude of the educational impacts both in relationship to research on closely related programs and with respect to their implications for future detectable employment impacts. Next, we address implications of the education findings for designing programs. A final section describes open questions.

8.1 Key Findings and a Possible Explanation

This report described mixed results with respect to the study's two confirmatory outcomes at this time point. Three years after study enrollment:

- VIDA had a 9 percentage point impact (61 percent versus 52 percent) on earning a college credential requiring a year or more of study,
- but it had no detectable impact on earnings in follow-up quarters 12-13.

Consistent with the positive finding for the confirmatory education outcome, VIDA had a positive impact on a range of secondary and exploratory education outcomes, including receipt of a degree (associate or higher), receipt of any college credential, receipt of college credits, and FTE months of college enrollment. In addition, impacts on the confirmatory education outcome and almost all secondary education outcomes grew between the end of Year 2 and the end of Year 4. Also notable is that positive impacts on college enrollment continued through Year 4 (and Year 5 for the early cohort for which we have an additional year of follow-up data), a period in which almost all treatment group members no longer received services from VIDA.

Similarly, consistent with a lack of a positive impact on the confirmatory earnings outcome, VIDA had only scattered positive impacts on secondary and exploratory employment outcomes, including no detectable positive impact on earnings at any time within four years of follow-up for the full sample (or five years for the early cohort), and no detectable impact on a broad range of survey measures of job quality at three years.

VIDA had impacts for women on living arrangements and childbearing. Treatment group women were less likely than control group women to be living with a spouse or partner or to be pregnant or have given birth to a child as of the three-year follow-up. These results spurred additional exploratory analyses, which provided suggestive evidence of gender differences in impacts on

education outcomes. These differences are suggestive of the mechanisms underlying the overall impact findings.

The enrollment impact for the full sample in Year 4 seems to be driven primarily by women and is consistent with their childbearing and living arrangements impacts. Together these impacts suggest that VIDA may have led some women to engage in school, leaving less time and energy for childbearing or marriage/partnering. It is also plausible that women's longer enrollment impacts contributed to their lack of detectable earnings impacts as well as the lack of impacts for the full sample given that women constitute 71 percent of it. Longer-term follow-up offers an opportunity to examine how these results evolve.

8.2 The Magnitude of VIDA's Educational Impacts

In this section, we characterize the size of VIDA's positive impacts on education relative to similar programs. The overarching purpose of this analysis is to identify similarities and differences in impacts across the programs to understand potential sources of differences where they exist, and so get perspective on why VIDA is having the impacts we observed. We address two questions:

- (1) How large are VIDA's most important educational impacts compared to programs with broadly similar education goals, namely increasing college completion rates?—Answering this question provides context to readers for the importance of VIDA's findings for both program design and potential future research. These comparisons also provide information relevant to addressing the second question.
- (2) What are the implications of VIDA's educational impacts for future positive employment and earnings impacts?—VIDA's core mission is to help participants get better jobs with higher earnings. Although VIDA pursues this employment goal by supporting participants' postsecondary education, its goals are not narrowly educational. Instead, the ultimate goal is higher earnings.

To address these two questions, this section compares VIDA's results to recent findings on two similar programs. The first program, Project QUEST ("QUEST"), operates under the same model as VIDA, but in a different city in Texas.⁶⁶ The second program, the City University of

⁶⁶ QUEST operates in San Antonio and began in 1992. VIDA, purposely following QUEST, adopted the same model in 1995. In addition, the model operates in seven other localities, most of which are also in Texas. Because, like VIDA, all of these programs also intentionally followed the model used by Project QUEST, it is often referred to as "the QUEST model." There is some variation in implementation of the model due to adaptation to local circumstances.

New York Accelerated Study in Associate Programs ("ASAP"),⁶⁷ uses a similar model. All three programs require full-time enrollment and regular mandatory counseling. All three programs provide tuition and transportation assistance. Importantly, both comparison programs had the largest educational impacts in published research based on randomized control trials, providing a relevant benchmark for VIDA's results. And QUEST has had some of the largest earnings impacts in the experimental research on post-secondary education and workforce outcomes.

Although the three programs are very similar in their components and overall approach, differences in how they are implemented are relevant to interpreting impact comparisons across the programs. Two of the most important differences are:

- Population—QUEST study participants were not currently enrolled in college at random assignment; ASAP study participants were a mixture of newly enrolling and currently enrolled college first-year students; and VIDA participants were a mix of newly enrolling and currently enrolled students, but with more in the currently enrolled group, many of whom had already made substantial progress toward a credential.
- Target credentials—for QUEST, the primary credential was a certificate, with only about 15 percent of study participants seeking a degree; for ASAP, all participants were seeking an associate degree; for VIDA, there was a mix, with the majority seeking an associate degree or higher. In addition, QUEST and VIDA supported only occupational courses of study identified by the program, whereas ASAP primarily supported academic courses.

These differences affect the comparisons across programs that we are able to make as well as the interpretation of the comparisons we do make, and we indicate these situations below.

In this section, we first compare VIDA's impacts to ASAP's and QUEST's for education outcomes. We then compare VIDA's and QUEST's earnings impacts to see whether they help understand the lack of earnings impacts for VIDA thus far. Earnings impacts are not available for ASAP.

8.2.1 VIDA's Educational Impacts in the Context of Other Experimental Research

Although there are multiple education outcomes on which VIDA had positive impacts, the study focuses primarily on receipt of credentials and secondarily on enrollment. The study's confirmatory education outcome is a measure of credential receipt. In addition, receiving a credential represents completion; it does not represent just progress as, for example, enrollment and credits do. Finally, consistent with the career pathways theory of change as applied to

⁶⁷ For simplicity, unless otherwise explicitly stated, we use "ASAP" to refer to the CUNY ASAP study (Gupta 2017), but readers should be aware that there are several replication random assignment studies of the CUNY program underway, some of which have published results, including an Ohio ASAP study. In the Ohio study, three-year impacts on associate degrees were very similar to those of the CUNY program at the same point in time (Miller et al. 2020). We do not include Ohio ASAP in the comparisons, because only three years of follow-up are currently available.

VIDA, we focus primarily on credential receipt because it is most relevant to our second issue, the implications of educational impacts for future earnings impacts.

Some broader research finds that college enrollment even without completion of a credential can have positive earnings impacts (Giani et al. 2019; Belfield and Bailey 2017), but most VIDA participants are training in medical fields, which require a credential in order to have a license. Very likely, any positive earnings impacts for VIDA will be mediated primarily by positive credential receipt impacts. We also examine ongoing enrollment impacts, because the career pathways theory of change as applied to VIDA posits that positive impacts on enrollment both can depress earnings in a period in which the impacts occur and can portend future larger credential receipt impacts.

Credential Receipt

We first compare VIDA and QUEST impacts on receipt of college credentials requiring a year or more of study, the confirmatory education outcome for VIDA. Both programs supported such degrees and certificates, although a different mix. VIDA's most common target credential was an associate degree and QUEST's was a certificate.⁶⁸ Restricting the comparison outcome to credentials requiring a year or more means that the QUEST impacts do not reflect the full impact of the program on credentials, as about 25 percent of its research sample was seeking a seven-month certificate.⁶⁹

The top panel of Exhibit 8-1 shows that over five follow-up years, VIDA and QUEST have very similar impacts on credentials requiring a year or more of study.⁷⁰ Through Year 3, both programs have cumulative positive impacts of more than 10 percentage points, which are sustained through Year 5.⁷¹ The impacts on credentials of this length are the largest we are aware of in the literature.

⁶⁸ We don't include ASAP in this comparison, as its target credential was an associate degree and did not include certificates.

⁶⁹ The seven-month program (medical records coder) was available only to QUEST treatment group members. However, it's possible that their control group counterparts (who cannot be identified in the data) earned shorter-term credentials in other areas, so QUEST researchers cannot estimate the extent to which lack of inclusion of the medical coder certificate in NSC resulted in an understatement of the program's overall impact on college credentials. About 7 percent of the VIDA treatment group sought shorter-duration certificates that VIDA supported, but they did not enroll in college.

⁷⁰ In Year 1, although neither program had a significant impact on credentials, there was a marginally significant difference of no policy import in impacts between the programs as a result of the small numbers.

⁷¹ For QUEST, the cumulative impact on these credentials through Year 9 is 16.4 percentage points.

In the bottom panel of Exhibit 8-1, we next compare VIDA and ASAP cumulative impacts on associate degrees,⁷² on which there is a larger body of experimental research and which typically have greater value in the labor market than certificates. Such degrees have been found to have larger impacts on employment outcomes than do certificates taking a year or more of college, especially with respect to some occupational areas such as healthcare (Belfield and Bailey 2017; Dadgar and Trimble 2015). We compared VIDA and ASAP impacts on associate degrees over a five-year follow-up period. In order to do so, we rely on VIDA's early cohort, which represents about 80 percent of the full sample.⁷³

	Cumulative Impacts (Standard Error)						
Program	Year 1	Year 2	Year 3	Year 4	Year 5		
Comparison of VIDA and QUE	EST, Receipt of Cre	edential That Takes	s a Year or More of	College to Compl	ete		
VIDA (early cohort) (%)	3.0 (2.9)	8.0** (3.4)	10.5*** (3.3)	11.4*** (3.2)	13.4*** (3.2)		
QUEST (%)	-1.2 (1.3)	4.1 (2.8)	10.1*** (3.6)	12.6*** (4.0)	12.9*** (4.1)		
Difference in Impacts	4.2	3.9	0.4	-1.2	0.5		
Comparison of VIDA and ASAP, Receipt of Associate Degree							
VIDA (early cohort) (%)	1.0 (1.8)	2.7 (3.1)	7.7** (3.4)	9.1*** (3.4)	11.7*** (3.5)		
ASAP (%)	0.2 (0.2)	5.6*** (2.2)	17.9*** (3.0)	15.2*** (3.2)	12.0*** (3.3)		
Difference in Impacts	0.8	-2.9	-10.1**	-6.1	-0.3		

Exhibit 8-1: VIDA, QUEST, and CUNY ASAP Cumulative Impacts on Educational Credentials

Source: VIDA partner college records; Roder and Elliott (2020) for QUEST; Gupta (2017) for CUNY ASAP.

Note: ASAP refers to City University of New York Accelerated Study in Associate Programs. ASAP does not have data on certificates that take a year or more to complete, as these were not its target credentials. Statistical significance is based on two-tailed tests. Sample sizes: 381 treatment and 383 control for VIDA, 207 treatment and 203 control for QUEST, 451 treatment and 445 control for ASAP. Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

After three years, ASAP has a larger impact on associate degrees than VIDA; but past three years, the trajectories of the impacts for the two programs converge (Exhibit 8-1 above, bottom panel).⁷⁴ VIDA's impacts show signs of growth throughout the five years, whereas ASAP's show

⁷² Because only a small share of the QUEST population was seeking an associate degree through the program, the report on nine-year findings does not include *longitudinal* impacts on degrees and thus we do not include them in this comparison. The report does include the *cumulative* impact on associate degrees; by the end of nine years, 15 percent of the QUEST treatment group had earned an associate degree versus 13 percent of the control group, a non-significant difference.

⁷³ There are no significant differences in impacts on degrees between the early and late VIDA cohorts.

⁷⁴ We rely on VIDA's early cohort for the five-year comparison. There are some differences in enrollment impacts between the early and late cohorts, but the differences do not affect the VIDA/ASAP comparison.

some amount of control group catch-up after three years, the time when ASAP enrollment ended. By the end of five years, the two programs' cumulative impacts on degrees earned are nearly identical. Because ASAP has the largest impact on associate degree receipt that has been observed in a random assignment evaluation over a five-year follow-up period, this means that VIDA's impact is also one of the largest documented in the research.

Enrollment

It is useful to compare VIDA's enrollment impacts to ASAP's and QUEST's for several reasons. First, we did not expect VIDA to have positive impacts on enrollment in follow-up Years 4 and 5, periods in which the vast majority of participants had left the program, so comparing VIDA to other similar programs can help to shed light on whether that pattern was unusual. Second, comparing VIDA's temporal pattern of enrollment impacts might plausibly help to understand VIDA's and ASAP's divergent pattern of impacts on associate degree receipt in Years 4 and 5. That is, ASAP's lack of enrollment impacts in those years would be consistent with the contrast between VIDA's growing impacts and ASAP's diminishing ones. Finally, comparing VIDA's to QUEST's temporal pattern of enrollment impacts is relevant to the discussion coming in Section 8.2.2, in which we compare the two programs' impacts on earnings. We rely on VIDA's early cohort to extend follow-up to five years.⁷⁵

Although the pattern of estimates on impacts on enrollment for QUEST and VIDA (Exhibit 8-2, top panel) appears to be different, with larger impacts for QUEST in Years 1 through 3 and for VIDA in Years 4 and 5, the only statistically significant difference between the impacts is QUEST's larger impact on Year 1 enrollment. This larger enrollment impact is consistent with the QUEST study population being drawn from applicants not currently enrolled in college, in contrast to the VIDA population, the majority of whom (including control group members) were already in college programs. Notably, the large, significant impact in Year 4 for VIDA is not statistically different from the small non-significant estimate for QUEST.

VIDA's and ASAP's enrollment impacts are similar through follow-up Year 3, but by the fourth year they diverge. Both programs have positive impacts on enrollment in Years 1 and 2, and neither has a detectable impact on enrollment in Year 3. However, beyond that point, VIDA has positive impacts in both Years 4 and 5, whereas ASAP does not (Exhibit 8-2, bottom panel). The differences in the timing of impacts on associate degree receipt for the two programs is consistent with the programs' different trends in impacts on enrollment. Although continuing positive enrollment impacts do not guarantee growing degree impacts, in VIDA's case this occurred (see the growing impact on associate degree receipt in Exhibit 8-1 above, bottom panel).

⁷⁵ There are some differences in enrollment impacts between the early and late VIDA cohorts, but the differences do not affect the substance of this comparison.

Summary

Over a five-year period, VIDA's impacts on credentials requiring a year or more of college, as well as its impacts on associate degrees, are among the largest in the context of random assignment studies, and comparable in size to QUEST's and ASAP's, respectively.

			Impacts (Standard Error)				
Program	Year 1	Year 2	Year 3	Year 4	Year 5		
Comparison of VIDA and O	QUEST, College En	rollment					
VIDA (early cohort) (%)	12.3** (2.9)	6.1* (3.7)	4.2 (3.4)	9.7*** (3.0)	5.3** (3.3)		
QUEST (%)	21.3*** (4.3)	11.4** (4.6)	11.8** (4.6)	3.2 (4.4)	0.5 (4.1)		
Difference in Impacts	-9.0*	-5.3	-7.6	6.5	4.8		
Comparison of VIDA and ASAP, College Enrollment							
VIDA (early cohort) (%)	12.3** (2.9)	6.1* (3.7)	4.2 (3.4)	9.7*** (3.0)	5.3** (3.3)		
ASAP (%)	9.9*** (2.3)	7.5** (3.1)	3.8 (3.4)	-3.9 (3.3)	-2.0 (3.2)		
Difference in Impacts	2.4	-1.4	0.4	13.6***	7.3*		

Exhibit 8-2. VIDA	OUEST	and CUNV	ASAD In	nnacte on	Collogo	Enrollmont
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Source: VIDA partner college records; Roder and Elliott (2020) for QUEST; Gupta (2017) for CUNY ASAP.

Note: ASAP refers to City University of New York Accelerated Study in Associate Programs. Statistical significance is based on two-tailed tests. Sample sizes: 381 treatment and 383 control for VIDA; 207 treatment and 203 control for QUEST; and 451 treatment and 445 control for CUNY ASAP.

Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

8.2.2 VIDA's Educational Impacts and Potential for Future Positive Earnings Impacts

VIDA's impacts on college credentials requiring a year or more of study and on associate degrees are large in the context of randomized control trial research, but that in itself does not directly imply anything about the likelihood of the program achieving detectable positive earnings or other employment impacts going forward. Comparing similarities and differences in VIDA's and QUEST's earnings impacts in light of similarities in their credential and enrollment impacts is potentially helpful in understanding current estimates of VIDA's earnings impacts as well as its potential for future earnings impacts. The two programs share the same program model and their evaluations both include similar longitudinal administrative earnings data,⁷⁶ which makes a comparison of earnings impacts over time straightforward and useful in understanding VIDA's patterns. We caution that other factors that we cannot examine could also explain these differences.

⁷⁶ The estimates of earnings impacts for QUEST are based on Texas Unemployment Insurance earnings records. As described in Chapter 2, the VIDA impacts, which are based on NDNH, include the Texas records, as well as those of other states and earnings from federal employment.

QUEST—in contrast to VIDA—has a pattern of earnings impacts that are similar to what the theory of change predicted for VIDA. As would be expected because of their full-time enrollment requirement, both VIDA and QUEST have negative impacts on participants' earnings initially: VIDA for one year and QUEST for two years after random assignment (Exhibit 8-3).⁷⁷ However, by the fourth year, QUEST has a significant positive earnings impact and VIDA does not. QUEST's positive impact is sustained into the fifth year.^{78,79}

	Impacts (Standard Error)						
Program	Year 1	Year 2	Year 3	Year 4	Year 5		
Comparison of VIDA and QUEST, Annual Earnings							
VIDA (early cohort) (\$)	-1,575** (662)	-485 (1,050)	-1,216 (1,390)	-550 (1,768)	435 (1,833)		
QUEST (\$)	-2,786** (922)	-2,748** (1,187)	1,934 (1,627)	4,238** (1,822)	3,921* (1,993)		
Difference in Impacts	1,211	2,263	-3,150	-4,788*	-3,486		

Exhibit 8-3: VIDA and QUEST Impacts on Annual Earnings

Source: National Directory of New Hires for VIDA; Roder and Elliott (2019); email from Anne Roder for standard errors for QUEST. Statistical significance is based on two-tailed tests. Sample sizes: 381 treatment and 383 control for VIDA, 207 treatment and 203 control for QUEST. Statistical significance levels based on differences between research groups: *** 1 percent level; ** 5 percent level; * 10 percent level.

The emergence of significant positive impacts on earnings for QUEST in follow-up Year 4 along with the positive enrollment impacts for VIDA in that year suggested that the latter could be a contributor to the lack of positive earnings impacts for VIDA. However, the lack of a statistically significant difference between VIDA's and QUEST's impacts on enrollment in Year 4 indicates that the evidence for this is weak. In addition, there are other features of the two programs' implementation that, although we are unable to measure them, plausibly could lead to differences in earnings impacts. For example, QUEST appears to have had a more robust job development component that is actively involved in placing graduates, whereas VIDA provides some job finding support but primarily relies on college placement services. Possibly this could lead to earlier or larger earnings impacts for QUEST.

The lack of significant differences between VIDA's and QUEST's impacts on enrollment in Years 4 and 5, however, does not rule out other evidence that VIDA treatment group earnings could be depressed by its college enrollment impacts. Most notably, it is widely accepted that college enrollment entails lower earnings as an opportunity cost during the period of enrollment.

⁷⁷ For simplicity, we use unadjusted nominal dollars for both programs. A rough estimate is that QUEST's values in Years 4 and 5 would be about 7 percent larger if we adjusted for its sample having been drawn between 2006 and 2008 and VIDA's between 2011 and 2014.

⁷⁸ We don't show impacts beyond five years for QUEST, as comparable data for VIDA are not yet available, but QUEST's annual earnings impact is more than \$5,200 in Year 9.

⁷⁹ For the full VIDA sample, the difference in earnings impact between the two programs is \$4,912 in Year 4. The slightly larger difference in impact and the larger VIDA sample lead to the difference being statistically significant at the .05 level.

In addition, VIDA's large impacts on associate degree receipt (12 percentage points by the end of Year 5 for the early cohort) and the possibility that positive enrollment impacts in Years 4 and 5 will lead to a larger impact on credential receipt in later follow-up, are consistent with the possibility that earnings for treatment group members could grow faster than for control group members going forward.⁸⁰ These conjectures, however, should be regarded cautiously. Only longer-term follow-up can provide the answer to whether VIDA will produce detectable positive earnings impacts.^{81,82,83}

8.3 Implications for Programs

Although an assessment of VIDA's effectiveness in increasing earnings requires longer followup, the program's educational success is clear. VIDA's impacts on college credentials requiring a year or more of study and on associate degrees are among the largest estimated by high quality experimental methods. The only programs evaluated by randomized trials that we are aware of that have comparable impacts are QUEST and the CUNY and Ohio ASAP programs.⁸⁴ Although the four programs vary in their program features, they also have a core of strongly similar features. Although not definitive, the fact that this combination of program features has been tested four times and, in each case, produced larger impacts on longer-duration certificates and degrees than any other approach strongly suggests that it is an effective strategy for increasing receipt of such credentials.

• The program strategy of required full-time enrollment and regular counseling along with financial supports such as for tuition and transportation can produce large impacts on credential completion.

⁸⁰ That QUEST had growing credential impacts well after treatment group members had ceased to participate in the program is encouraging evidence that VIDA may also continue to do so.

⁸¹ Another factor that we can rule out is that the longer credentials that many VIDA recipients sought led to longer stays in the program than for QUEST recipients. We examined this and found that participants in both programs exited at almost identical rates (so VIDA participants' enrollment impacts in Years 3 and 4 are happening after almost all participants had exited VIDA). The QUEST data also suggest that our selection of timing of outcomes (quarters 12 and 13) related to how fast educational gains would translate into earnings impacts was too optimistic. By the end of two years, more than two thirds of QUEST participants had exited, and presumably completed their target credentials, but an earnings impact was not detected as significant until the fourth follow-up year.

⁸² In addition to our inability to measure factors that could bring about differences in earnings impacts between the two programs, we also have only two programs to compare. Many factors and only two programs preclude anything more than modest statements about what might lead to differences in their effects.

⁸³ Assuming a standard error roughly the same size as for Year 4 earnings, the study would have 80 percent power to detect an annual earnings impact of \$3,000-\$3,500 at a .10 significance level in a one-sided test.

⁸⁴ Ohio ASAP's impacts on degrees after three years was 16 percentage points and so very similar to CUNY ASAP's.

Although we cannot attribute the success of these four programs with respect to college outcomes to particular program features, it is plausibly related both to their program components and to the populations they select for participation. The benefit of full-time enrollment can accrue only to participants who, with appropriate supports such as those provided by the four programs, are capable of full-time enrollment. However, for participants who, with supports, can enroll full-time in college, requiring such enrollment along with intensive counseling and financial supports can greatly increase their likelihood of educational success.

• That program strategy also can be effective for a fairly broad range of participants with different training interests and in varying geographical circumstances.

About 9 percent of VIDA students required remedial coursework, and applicants needed to read at the 10th-grade level to qualify for its College Prep Academy. Most VIDA participants were already enrolled in college programs when they entered the program. By contrast, QUEST study participants had to read at the 8th-grade level and not be currently enrolled. Both CUNY and Ohio ASAP participants were a mixture of newly and currently enrolled in college, and a large proportion required some but not extensive remedial coursework. The comparable successes of these programs in increasing longer-duration credentials suggest that a quite broad segment of potentials students could be helped by them. However, it is notable that few participants were severely educationally disadvantaged.

In addition, all the programs were successful in increasing educational outcomes despite important other differences. For example, VIDA and QUEST support only occupational education and training programs, and these were not the focus of the ASAP programs. Furthermore, the four programs were located in a variety of different geographical areas ranging from the Lower Rio Grande Valley to New York City. Thus, their common success was not due to a narrow postsecondary focus or geographical context.

• Potential participants who cannot enroll full-time or with more severe educational deficits need other strategies to be successful in earning longer-duration credentials.

Not all potential participants can immediately benefit from the strategy adopted by VIDA, QUEST, and ASAP. Some have employment or family responsibilities that preclude full-time enrollment. Furthermore, as noted, none of the programs included students with severe educational deficits. How to effectively improve educational and employment outcomes for such individuals is not at all clear. It may be the case that no postsecondary educational strategies that include only part-time participation will be effective in improving earnings outcomes in a short or moderate timeframe. However, it is possible that some elements of the four programs' strategy could be adopted to help other populations, for example, financial supports and intensive mandatory counseling, but certainly some adaptations would be necessary to help more disadvantaged populations.

8.4 Open Questions

The PACE project plans to produce a longer-term VIDA report based on approximately two more years of follow-up. That six-year report will use longer-term administrative data on college

enrollment, credential receipt, and earnings as well as data from a six-year participant follow-up survey. In addition, subject to the availability of funds, a 10-year follow-up report is planned. The career pathways theory of change as applied to VIDA and the findings in this report raise important questions that will be addressed with longer follow-up:

• Will VIDA's positive impacts on college credentials requiring a year or more of study and on degrees shrink, persist, or grow?

By the end of four years of follow-up, VIDA had large positive impacts (10 percentage points) on receipt of college credentials requiring a year or more of study to earn, as well as on other measures of educational attainment (e.g., 9 percentage points for associate degree receipt). These impacts grew between the end of Years 2 and 4. Given VIDA's continuing positive impacts on enrollment through the fourth year, these impacts might plausibly grow.

• Will VIDA's positive impacts on enrollment continue or fade?

We did not expect that VIDA would have positive enrollment impacts in Year 4 (for the full sample) or Year 5 (for the early cohort). If there are no impacts on enrollment in Year 6, further detectable growth in impacts on credentials becomes unlikely, but detectable positive impacts on earnings become more likely. On the other hand, if positive enrollment impacts are continuing, even longer-term follow-up will be important. Thus, measuring enrollment impacts with two more years of follow-up will be important in assessing whether VIDA's educational impacts are likely complete.

• Will VIDA have positive impacts on earnings, career-track employment, and job quality?

Through Year 4, the evaluation did not detect positive impacts on earnings, but it had positive impacts on both completion of certificates requiring a year or more of college and associate degree receipt and it had college enrollment impacts into the fourth year (the last year that data were available for the full sample). Follow-up analysis will investigate whether these educational impacts translate into labor market impacts over the next two years of follow-up (i.e., Years 5 and 6).

• Will VIDA's impacts on childbearing and living arrangements continue?

VIDA's impacts on reducing women's childbearing and on living arrangements over three followup years are consistent with its continuing impacts on college enrollment. How long these impacts persist (i.e., are these relatively permanent changes, or are they delays for which there will be catch-up once impacts on college enrollment cease) is an important question that longerterm follow-up with the six-year survey can begin to address. This question is relevant not only to childbearing and marriage/partnering in themselves, but potentially also to women's choices with respect to employment and balancing work and family life.

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