URBAN EDUCATION INSTITUTE

GROWING TOMORROW'S HEALTHCARE PROVIDERS AND LEADERS:

AN IMPACT STUDY OF THE BAPTIST HEALTH FOUNDATION OF SAN ANTONIO SCHOLARSHIP PROGRAM

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EXECUTIVE SUMMARY

In November of 2018, the Baptist Health Foundation of San Antonio (Foundation) hired the Urban Education Institute at the University of Texas at San Antonio (UEI) to perform a quantitative evaluation of the Foundation's higher education scholarship program.

The purpose of the study was to advance the Foundation's understanding of its awardees and its scholarship program's effect on their educational and workforce outcomes. UEI worked with the Foundation to gather data from its higher education partners to complete this study. Ultimately, incomplete data limited the study's sample to students enrolled in community colleges, the University of Texas Health Science Center at San Antonio (UTHSC), the University of Texas at San Antonio (UTSA), and the Baptist Health System School of Health Professions (BSHP). This report presents the results of this research.

We used descriptive statistics and, where possible, a quasi-experimental research design to estimate the scholarship program's effects. The quasi-experimental research design used meets the standards of causal inference prescribed by the Institute of Education Sciences of the US Department of Education. We were unable to use this more rigorous research design when analysing BSHP's data because for-profit institutions are not required to report the same level of detailed data on their students to the Texas Higher Education Coordinating Board, the source of UEI's higher education data. As a result, findings associated with BSHP are correlational, not causal.

KEY FINDINGS

- Receiving a scholarship was associated with the likelihood of community college certificate or degree completion within two years by 23.1 percentage points.
- Receiving a scholarship was associated with an increased likelihood of master's degree completion within two years at the public institutions by 19.2 percentage points.
- Receiving a scholarship was not associated with bachelor's or doctoral degree completion at the public institutions.
- Scholarship awardees at BSHP were more likely to earn an associate degree or higher as award funding increased.
- Scholarship funding increased the likelihood of student debt for undergraduates at the public institutions by 7.8 percentage points.
- Scholarship funding was associated with lowered rates of student debt for BSHP students by as much as 13.6 percentage points.
- Nearly all awardees with employment data worked for a healthcare employer within two years following degree completion. Their probability of employment with a healthcare employer ranged from 74.5 percent (community college students) to 90 percent (BSHP graduates) to 100 percent (doctoral students).
- Nearly all two-year college awardees (90 percent) and most four-year college awardees (76 percent) lived within the Foundation's service area when they first received an award.
- Nearly all two-year college awardees (82 percent) and four-year college awardees (99 percent) majored in a health-related major when they received Foundation funding. All BSHP awardees (100 percent) majored in a health-related major.

DISCUSSION

DEGREE COMPLETION

The Foundation's strategy for encouraging degree completion through scholarship funding is well founded. Existing empirical research has found that grant aid improves college degree completion rates at the undergraduate and graduate levels when provided to students at the start of their degree program. With adequate financing, students are less likely to juggle work and school and more likely to engage in their studies. Measures of academic engagement include enrolling in more courses and continuous enrollment. Grant aid also improves longer-term outcomes, such as graduate education and future earnings (Bettinger, 2004; Curs & Harper, 2012; Chen & DesJardins, 2008, 2010; DesJardins, McCall, Ott, & Kim, 2010; DesJardins & McCall, 2010; Dynarski, 2002; Deming & Dynarski, 2009).

The Foundation's scholarship program improved degree completion but not for all awardees. No effect on completion was found for undergraduate students and doctoral students at the public institutions. We believe this was due to timing. Awards for students pursuing a bachelor's degree were primarily directed at juniors and seniors. Once a student reaches this advanced stage of their program, they are unlikely to drop out. For example, upper-division students who did not receive an award had a degree completion rate of 85 percent. A similar logic applies to doctoral students.

For students seeking a bachelor's degree, an alternative interpretation holds that the analysis underestimates effects on health-related degree completion because we are not accounting for the persuading of lower-division students to choose a healthcare-related major. This is a valid

possibility that is not disproved by the current research design.

Changes in the allocation of scholarship funds could produce larger overall impacts on degree completion. Prioritizing community college students and master's degree students over doctoral students would increase the scholarship program's overall impact. The organization could also consider targeting first-year bachelor's students with a health-major over third-year students.

HEALTHCARE EMPLOYMENT

We used a descriptive analysis to study employment patterns of scholarship awardees. We found that nearly all awardees (75 to 100 percent) who had an employment record in our employment data system found employment with a healthcare employer. However, we did not find that their primary work location was within Bexar County or its surrounding counties. This may be an accurate account of where awardees work or it may represent a data limitation.

Employees residing in Texas who work for the federal government or who are self-employed are not captured in our data system, as these employers do not participate in the state's unemployment insurance program, the source of our employment data. Because Bexar County is home to many federal healthcare jobs, healthcare workers in Bexar County are more likely to be missing in our data.

FUTURE RESEARCH

The Foundation should consider expanding the scope of future research to include interviews of awardees. This would allow the Foundation to learn from the awardees' perspective how the scholarship program made a difference in their lives and what the Foundation could do to improve the program's effectiveness. This qualitative approach could also include a survey of awardees just prior to their graduation to improve our understanding of their employment plans after graduation. Interviews of awardees could also help determine if the program persuaded students to enter a healthcare field.

Finally, future quantitative evaluations of the scholarship program could be improved by requiring awardees to complete a secure online survey that collects certain student data to better identify awardees.

INTRODUCTION

San Antonio serves as a national and regional hub for healthcare, where all medical education for the US Military occurs. San Antonio is also home to the only Department of Defense Burn Center and two level-1 trauma centers. The healthcare sector employs one of every six workers in the San Antonio Metropolitan Statistical Area (MSA).

Despite the advanced development of healthcare in the greater San Antonio region, this field experiences one of the most significant skills gaps -- demand for skilled workers exceeds supply. The Baptist Health Foundation of San Antonio (Foundation) has long recognized the importance of addressing this skills gap. Since 2005, the Foundation has provided grant awards to residents of Bexar County and its contiguous counties with the goal of training "tomorrow's healthcare providers and leaders."

In November of 2018, the Foundation hired the Urban Education Institute at the University of Texas at San Antonio (UEI) to perform an impact study of the Foundation's higher education scholarship program. The primary purpose of this quantitative study was to evaluate the scholarship program's effect on its goals. The study accomplished this task by investigating the following two research questions:

1. Does the scholarship program cause an increase in the number of students earning a postsecondary degree in a major field of study related to healthcare?

2. Does the scholarship program cause an increase in the number of San Antonio area postsecondary graduates entering the San Antonio health sector?

Before presenting research findings, the following sections describe the scholarship program and its eligibility requirements, the research design used, and the awardees included in the study sample.

THE SCHOLARSHIP PROGRAM

The Foundation's scholarship program serves healthcare students seeking different levels of higher education. Students pursuing healthcare-related certificates, associate, bachelor's, master's, and doctoral degrees may all apply for scholarship aid if they meet the program's eligibility requirements:

- Permanent residence in the Foundation's eight-county service area (counties of Atascosa, Bandera, Bexar, Comal, Guadalupe, Kendall, Medina, and Wilson);
- Enrolled in San Antonio-area colleges and universities (public, private, and for-profit);
- Major in an approved health-related field of study;
- Intend to seek employment in the Foundation's service area following graduation;
- Meet their institution's minimum grade point average to receive grant aid;
- Demonstrate financial need according to their institution.

The local institutions of higher education that are eligible to receive Foundation funding include:

- Baptist Health System Clinical Pastoral Education Program
- Baptist Health System School of Health Professions
- Coastal Bend College
- Hallmark University
- Our Lady of the Lake University
- San Antonio College
- St. Mary's University
- St. Philip's College
- Texas Lutheran University
- The University of Texas at San Antonio
- The University of Texas Health Science Center at San Antonio
- The University of the Incarnate Word
- Trinity University
- UT School of Public Health San Antonio
- Wayland Baptist University

Eligible major fields of study include the following: nursing; healthcare; social work; psychology; counseling; therapeutic care (physical, occupational, and respiratory); dental; pharmacology; medical; nutrition; EMT; and hospital administration.

Students who received a scholarship are eligible for renewal in the following year if they meet all the original requirements set by their higher education institution and the Foundation. Institutions make renewal decisions.

The average size of an award varied by higher education institution. Community college awardees received an initial award of $832 on average. Undergraduate and graduate awardees at public institutions received an initial award of $3,117 on average. Awardees at BSHP received an initial award of $2,475 on average.

RESEARCH DESIGN

Like an architect's blueprint, a research design describes the major steps to be taken to answer a project's research questions. In this research design, we identify the student outcomes we want to explain. We describe how comparison groups needed to be defined due to data constraints for each degree level analyzed of public institutions (certificate or associate, bachelor's, master's, and doctoral degrees) and for BSHP students. We also explain the technical methodology we used to estimate effect sizes and correlations. We conclude this section with a description of the limitations of our research design.

STUDENT OUTCOMES OF INTEREST

We selected student outcomes based on the scholarship program's aim: to increase the supply of credentialed healthcare workers in the greater San Antonio area. For students at two-year and four-year public institutions, we evaluated degree completion by modeling a student's probability of degree completion within a specified time frame.

For students at BSHP, we needed to construct a different outcome variable because we lacked classification data (e.g., freshman, sophomore, junior, senior) and indicators of their degree program (e.g., certificate, associate, bachelor's). Unlike the public institutions, for-profits are not required to report these data to the state. As a result, we constructed an ordered multinomial variable that represented the level of a degree earned (e.g., one for no degree, two for certification, three for associate, four for bachelor's or higher).

For all students, we evaluated the probability of acquiring student loans following receipt of an award and the amount of student loans acquired following receipt of an award.

We also investigated the probability of entering employment with a health-related employer. Though we studied location of employment, due to missing data, we did not narrowly define this outcome variable to health-related employment in the Foundation's service area.

BSHP student data included more observations related to employment outcomes. This larger sample of labor market data allowed us to evaluate health-related employment and produce more robust findings.

COMPARISONS

We examined five different study populations to estimate program effects for (1) community college students, (2) bachelor's degree students at public institutions, (3) master's degree students at public institutions, (4) doctoral students at public institutions, and (5) BSHP students. Unfortunately, students enrolled in private colleges had to be excluded from the analysis due to data limitations. Private colleges did not consistently report their students' major fields of study to the state.

Students who did not receive a Foundation award were included in a quasi-control group if they met the program's eligibility requirements that we could verify. Quasi-control group members at public institutions lived within the Foundation's service area, majored in the same set of health-related fields of study, shared the same classification, and enrolled in the corresponding local colleges in the same year as the awardees to whom they were compared. Quasi-control group members at BSHP lived within the Foundation's service area, majored in the same set of health-related fields of study, and enrolled in the same year as the awardees to whom they were compared.

In the Appendix, see Table A1 for a description of the community college quasi-treatment and quasi-control groups by pre-treatment control variables. See Table A2 for a description of the students in our study sample who were pursuing a bachelor's, master's, or doctoral degree at

public institutions. Differences between quasi-treatment and quasi-control groups are standardized using inverse propensity weighting described below. See Table A3 for a description of the BSHP awardees in our study sample.

As mentioned earlier, BSHP student data included more employment data. To evaluate variations in employment outcomes for BSHP students, we compared BSHP awardees who earned a degree to a comparison group of BSHP students who attended the same college, studied the same majors, and earned the same degrees in the same year.

METHODOLOGY

This study used a quasi-experimental research design to estimate the average treatment effects on the treated. This research design is referred to as inverse probability weighting and is often used in policy impact studies that use observation data. This research design meets the standards of causal inference as prescribed by the Institute of Education Sciences of the US Department of Education in its What Works Clearinghouse Standards Handbook Version 4.

Survey researchers have long used weighting techniques to create representative samples. They add lower weights to groups that are over-represented in a sample and higher weights for groups that are under-represented. In the same fashion, inverse probability weighing adds lower weights to groups that are over-represented in their assigned category of treatment or control and higher weights to groups that are under-represented in their assigned category of treatment or control.

In this study, this weighting procedure eliminated the measurable differences in confounding variables (variables that are plausible alternative explanations for outcome differences) between quasi-treatment and quasi-control groups. See Tables A4 to A12 for a description of standardized differences and variance ratios of dependent variables for each quasi-experimental model.

In this study, over- and under-representation was based on a student's characteristics that are time-invariant or took place before receipt of the Foundation's scholarship. For the community college analysis, the research design controlled for the following confounding variables: gender, race and ethnicity, economically disadvantaged status, disability status, single-parent status,

academically disadvantaged status, prior semester credit hours earned, enrollment in multiple colleges at the same time, and previous attainment of an associate degree or higher. For analyses of students at public institutions, the research design controlled for the following confounding variables: gender, race and ethnicity, prior semester credit hours earned, classification, full-time enrollment at the time of award, Foundation service area residence, and major field of study. Cohort fixed effects were also included in all models.

After weights were added, the difference between the average student outcome of awardees (our quasi-treatment group) and that of the quasi-control group was estimated using a regression model.

Our analysis of BSHP student outcomes used a different methodology. As explained earlier, for-profit higher education institutions are not required to report the same data as public institutions report to the Texas Higher Education Coordinating Board. Due to this data limitation, we were unable to identify in which degree level (e.g., certificate, associate, bachelor's) students were enrolled and

their classification (e.g., freshman, sophomore, junior, senior). This limitation prevented us from evaluating the impact of BHFSA scholarship on timely degree completion for BSHP students. As an alternative, we chose to evaluate the relationship between level of degree earned and award amount for BSHP students.

For the BSHP degree-completion analysis, we ran an ordered logit regression model with a categorical dependent variable that indicated the four outcomes of degree completion within four years of receiving an award. The four outcomes were no degree earned, certificate earned, associate degree earned, and bachelor's or higher degree earned. In this model, we controlled for a series of confounding or independent variables: student gender, race and ethnicity, age, major field of study, award year, and number of awards received.

LIMITATIONS

Findings produced by quasi-experimental research designs such as the one used by this study are less definitive than random control trials. In particular, unobserved data limits all studies that work with observational data. For example, this study does not include a direct measure of each student's grit, the perseverance and passion for long-term goals, in estimating effects (Duckworth, 2007). If treatment group members disproportionately possess grit, and if variables included are poor proxies for grit, then grit may be a confounding variable. If this is the case, then not controlling for grit will cause program effects to be overstated. Of course, there may also be other lurking factors that bias effect sizes downward. Because these variables are unobserved, their confounding effects cannot be dismissed, only mitigated through research design, methodology, as well as a proper grounding in established theory.

Findings that involve correlation only should be considered descriptive, not causal. In this study, findings related to employment outcomes are descriptive. They accurately describe the correlation between receiving an award and later being employed in the health sector. However due to a lack of sample size, we were unable to use a quasi-experimental research design that controlled for plausible alternative explanations.

AWARDEES

In the following subsections, we describe the demographics of awardees by type of higher education institution and degree program. We also present summaries of their major field of study and classification, where possible.

DEMOGRAPHICS

As shown in Figure 1, scholarship awardees were predominately female across all degree levels. The share of female awardees at public institutions pursuing a certificate or associate degree, bachelor's degree, master's degree, and doctoral degree equaled 69 percent, 78 percent, 87 percent, and 59 percent of all awardees, respectively. The share of female awardees at BSHP equaled 81 percent.

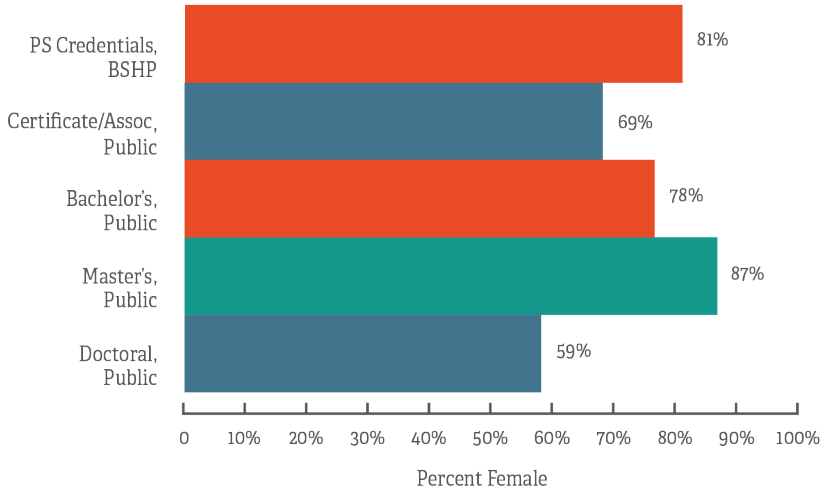

Figure 1.
Share of female awardees by degree level and institution type (N=1,507)

As shown in Figure 2, scholarship awardees ranged in average age between 27 and 33. Awardees at public institutions pursuing a certificate or associate degree, bachelor's degree, master's degree, and doctoral degree were 32, 27, 34, and 33 years of age, on average, respectively. BSHP awardees were 29 years of age on average.

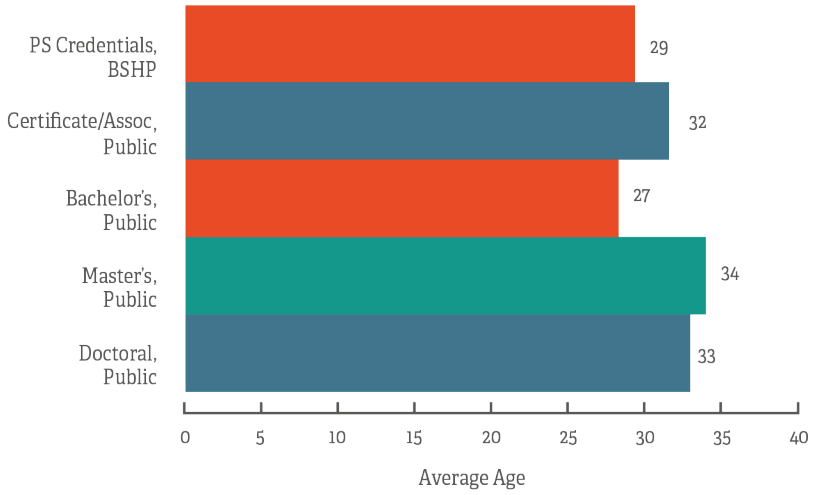

Figure 2.
Average age of awardees by degree level and institution type (N=1,507)

The share of Hispanic awardees at public institutions significantly varied, as shown in Figure 3. Nearly half of all community college awardees—48 percent—were of Hispanic ethnicity. Their representation of bachelor's degree awardees at public institutions dropped to 19 percent and declined further in the ranks of graduate school awardees at public institutions. Nine percent of all awardees pursuing a master's degree at public institutions were Hispanic; ten percent of all awardees pursuing a doctoral degree at public institutions were Hispanic. Hispanic students comprised 45 percent of BSHP awardees.

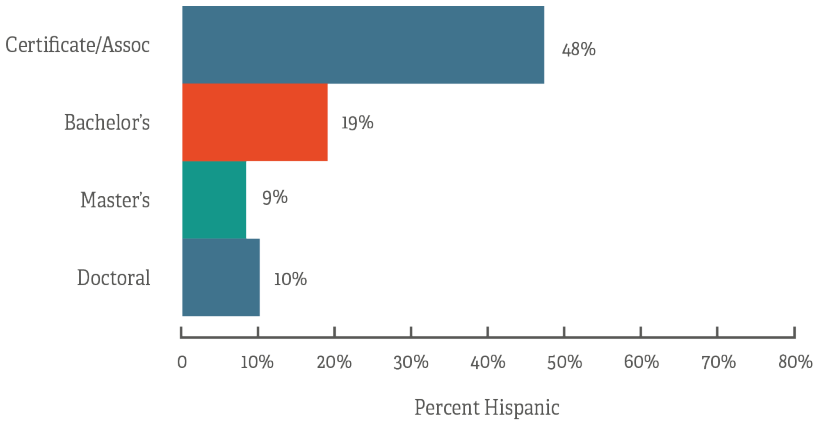

Figure 3.
Share of Hispanic awardees at public institutions by degree level (N=357)

For public institutions, Hispanic students are combined with students who self-identified as White or African American. As a result, Figures 4 and 5 illustrate the shares of White and African American awardees, which each include Hispanic students. The share of awardees at public institutions who self-identified as White varied by degree level, as shown in Figure 4. Seventy percent of community college awardees were White. Nearly half of all bachelor's degree awardees (48 percent) and doctoral degree awardees (49 percent) at public institutions were White, while 60 percent of master's degree awardees at public institutions were White.

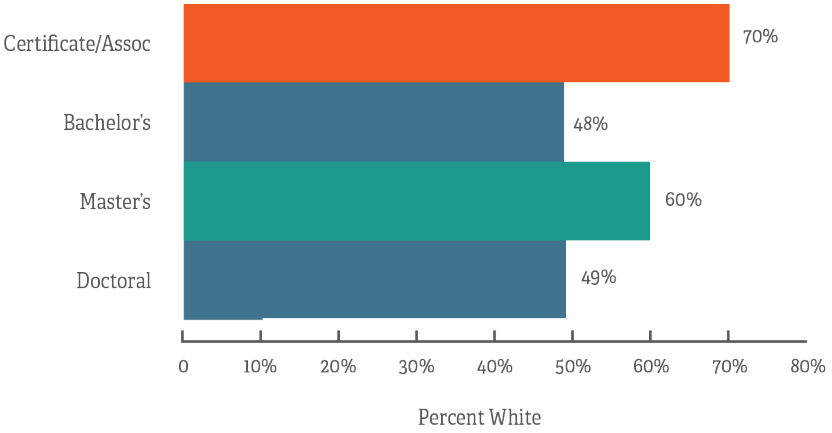

Figure 4.
Share of White awardees at public institutions by degree level, includes White students of Hispanic ethnicity (N=357)

The share of awardees who self-identified as African American ranged from zero percent to 11 percent by degree level, as shown in Figure 5. Just over one of ten community college awardees self-identified as African American. No awardees pursuing a bachelor's degree at public institutions were African American. About one of ten awardees pursuing a master's degree (9 percent) and doctoral degree (10 percent) at public institutions were African American.

For BSHP awardees, we were able to separate Hispanic students from non-Hispanic White and African American students. As shown in Figure 6, students who self-identified as Other, Asian, African American, Hispanic, and White made up 1, 3, 4, 45, and 47 percent of BSHP awardees, respectively.

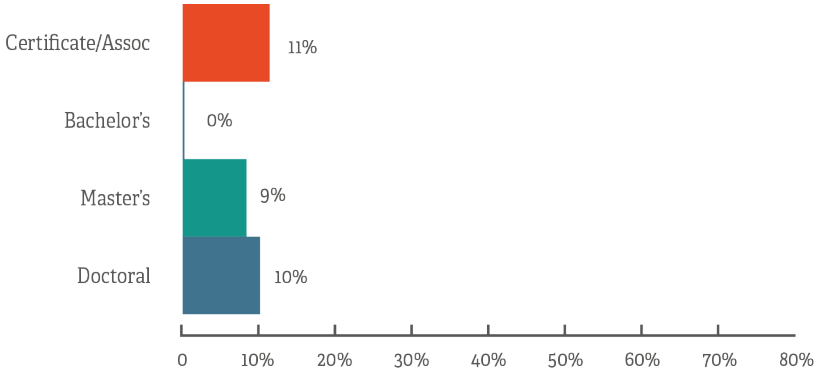

Figure 5.
Share of African American awardees at public institutions by degree level, includes African American students of Hispanic ethnicity (N=357)

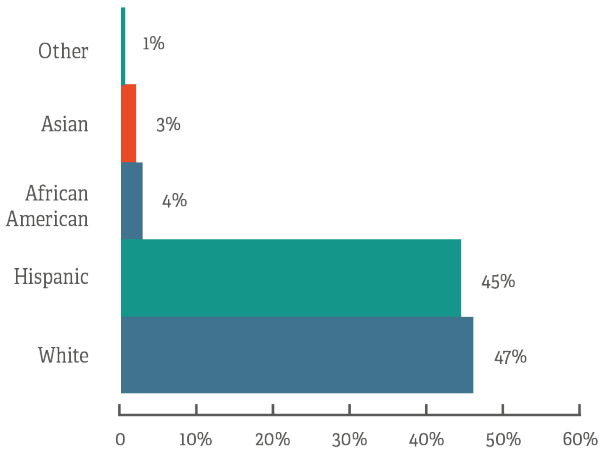

Figure 6
BSHP awardees by ethnic group (N=1,147)

MAJOR FIELD OF STUDY

Thirty-three percent of community college awardees majored in Allied Health Diagnostic, Intervention, and Treatment, as shown in Figure 7. Mental and Social Health Services and Applied Professions represented the second most popular major, amounting to 24 percent of all awardees. The third-largest share (17 percent) represented awardees whose major was outside of a health-related field or was undetermined at the time of receiving their award. The major ranking fourth in popularity was Allied Health and Medical Assisting Services at 11 percent. The next ranking major of significance was Practical Nursing, Vocational Nursing, and Nursing Assistants at 8 percent. See Table A3 in the Appendix for the complete distribution of students by major field of study and by type of public institution, two-year versus four-year.

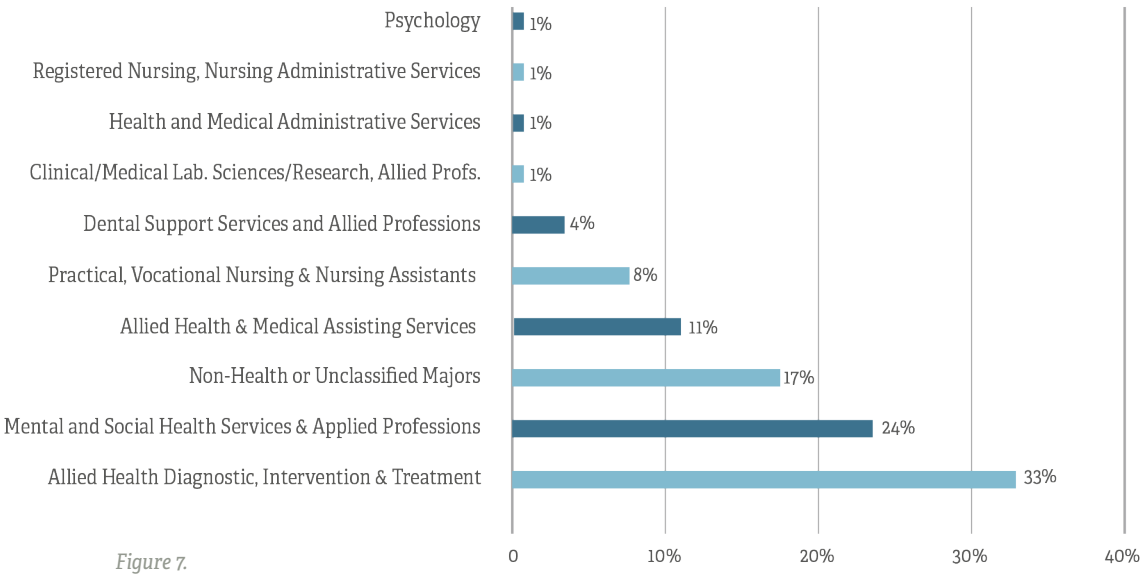

Figure 7.
Majors of community college awardees (N=159)

In contrast, half of all awardees enrolled at a four-year public university majored in Nursing, as shown in Figure 8. Three of ten awardees majored in Registered Nursing, the most popular major; while, two of ten awardees majored in Nursing in general. The third most popular major was Allied Health Diagnostic, Intervention, and Treatment. The fourth most popular major was Rehabilitation and Therapeutic Professions at 12.5 percent. All awardees enrolled at a four- year public university majored in a health-related field of study.

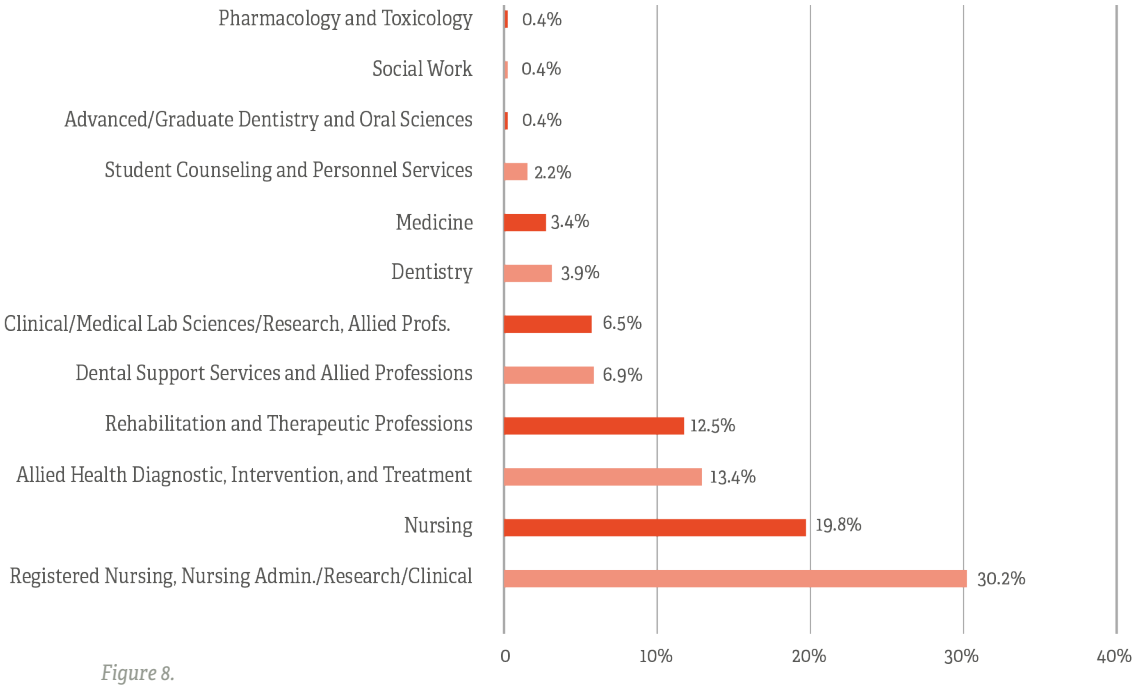

Figure 8.
Majors of awardees of four-year public colleges and universities (N=234)

BSHP awardees majored in two fields of study, as shown in Figure 9. Nearly eight out of ten (77 percent) majored in either Nursing Administration, Nursing Research and Clinical Nursing (CIP 51.38) or Practical Nursing, Vocational Nursing and Nursing Assistants (CIP 51.39).

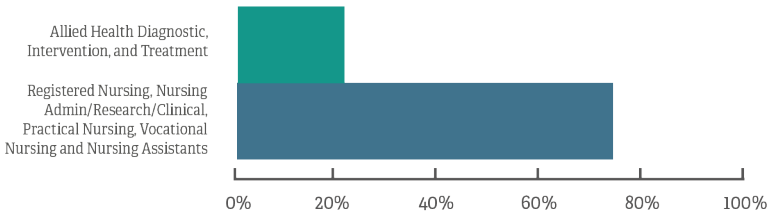

Figure 9.
Majors of BSHP awardees
(N=1,147)

CLASSIFICATION

Community college awardees were well on their way toward completing their two-year degree when they first received the Foundation's scholarship. Fifteen percent had previously earned a bachelor's degree or higher (3 percent) or an associate degree (12 percent). Another sixteen percent were unclassified, while forty-three percent were in their second year of studies. One out of four awardees were classified as a freshman, as shown in Figure 10.

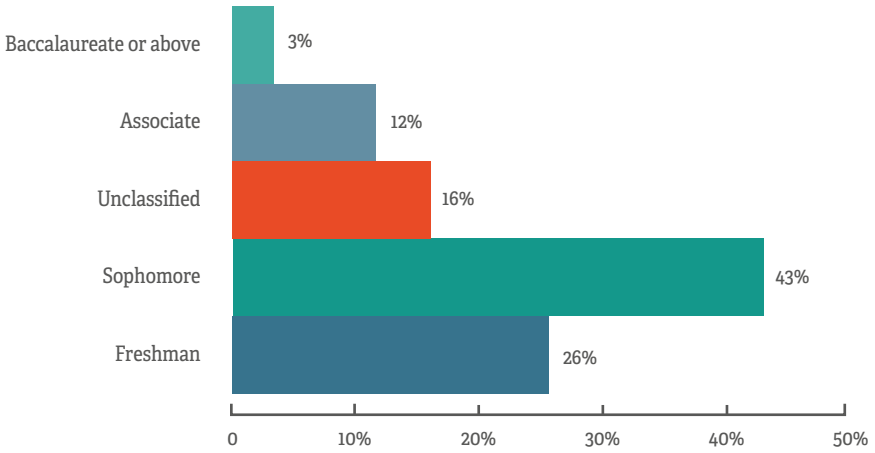

Figure 10.
Classifications of community college awardees (N=159)

Nearly all awardees pursuing a bachelor's degree at a public university were upper-division students, as shown in Figure 11. Forty-five percent were seniors, while 47 percent were juniors.

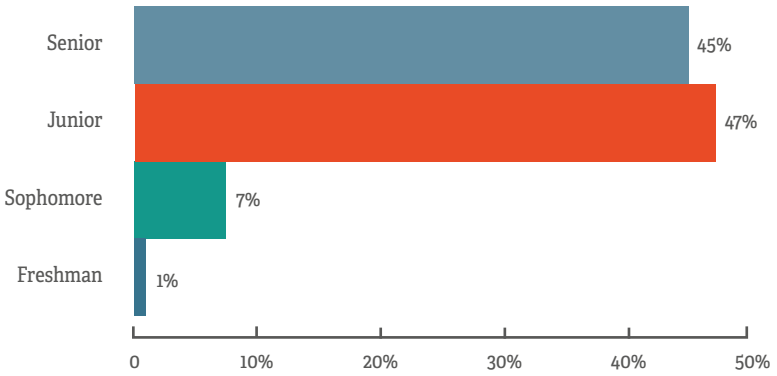

Figure 11.
Classifications of public university awardees pursuing a bachelor's degree (N=69)

As shown in Figure 12, 60 percent of graduate school awardees at local public universities pursued a master's degree. Twenty-two percent were completing a research doctorate. Five percent were completing a doctorate in a professional field, such as a Doctor of Nursing Practice. Almost 12 percent completed a doctorate in medicine or dental, and one percent were advancing their education in post-baccalaureate programs.

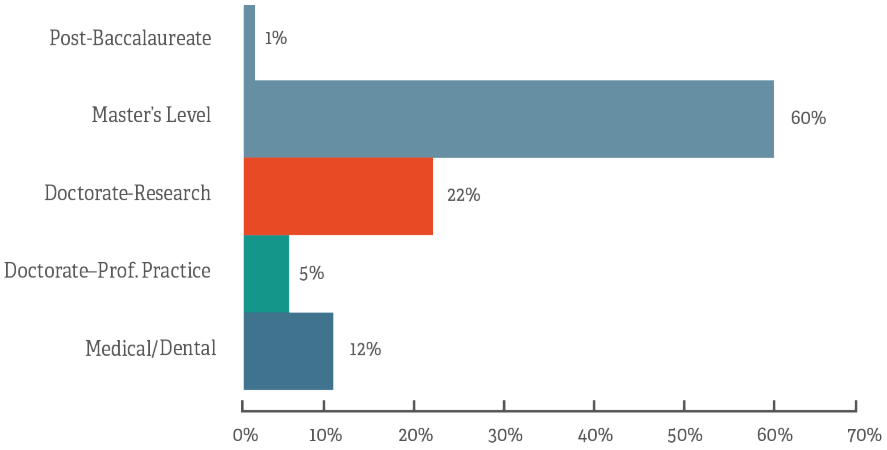

Figure 12. Classifications of public university awardees pursuing a graduate degree (N=157)

BASIC ELIGIBILITY CRITERIA

The permanent residence of awardees was established by college enrollment data, which was collected by public institutions at initial enrollment and annually updated. Using these administrative data, we found that 76 percent of public university awardees and 90 percent of community college awardees resided in the Foundation's service area, as shown in Figure 13.

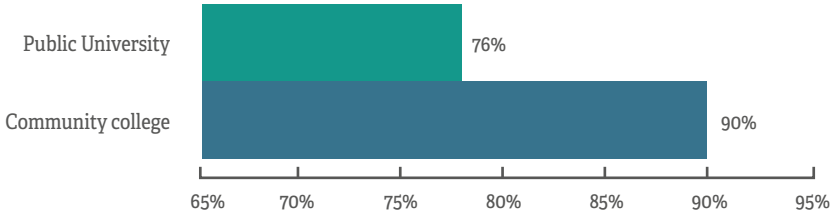

Figure 13. Share of awardees residing in BHFSA service area by awardees enrolled at a community college (N=159) and public university (N=234)

Enrollment data reported by public institutions also established awardees' major field of study in the first year of receiving a Foundation award. Using these administrative data, we found that 100 percent of public university and BSHP awardees, along with 83 percent of community college awardees, majored in a health-related field of study, as shown in Figure 14.

DEGREE COMPLETION RATES

Awardees completed their degree programs at relatively high rates, as shown in Figure 15. The share of community college awardees who completed their certificate or associate degree program within two and four years of receiving an award equaled 62 percent and 69 percent, respectively. The share of public university awardees who earned a bachelor's degree within four years of entering college equaled 89 percent. The percentage of public university awardees who earned a master's degree within two years of joining their master's program equaled 87 percent. The share of public university awardees who earned a doctorate within four years of entering their doctorate program equaled 80 percent. Finally, 94.5 percent of all BSHP awardees earned a postsecondary credential.

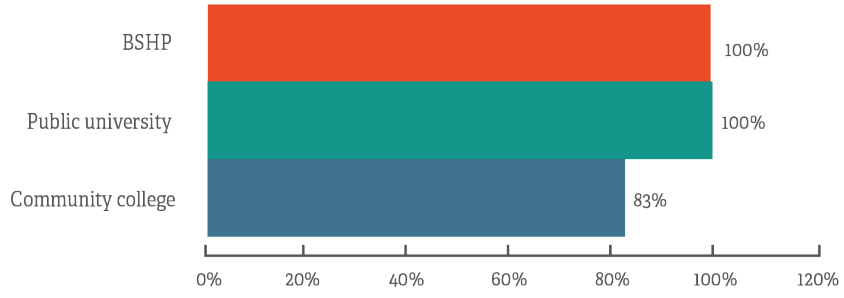

Figure 14. Share of awardees with a health-related major by awardees enrolled at a community college (n=159), public university (N=234), and BSHP (N=1,147)

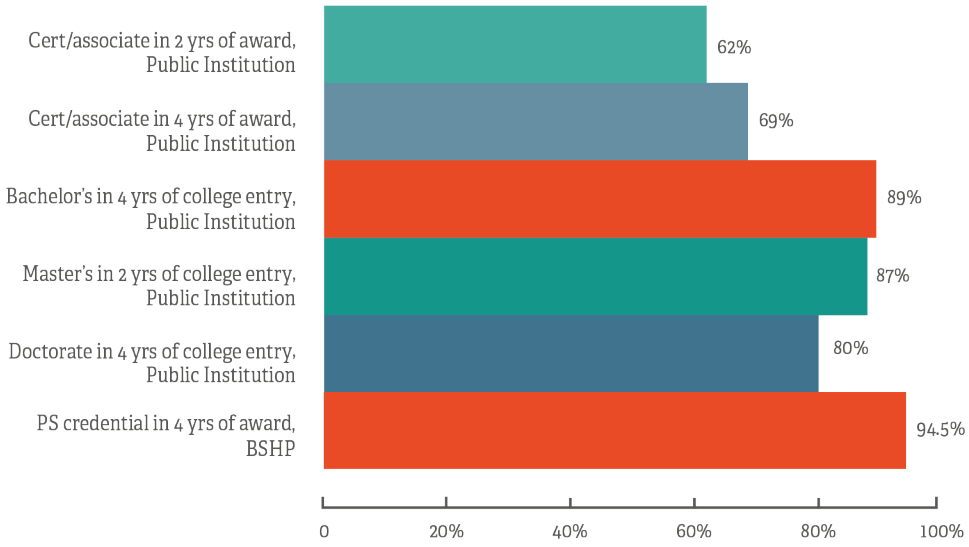

Figure 15. Degree completion rates of awardees by degree level, expected time to graduation, and institution type.

IMPACT

In the following subsections, we present our findings related to program effects on degree completion, student debt, and employment in the health-sector after graduation. As discussed in the research design section, our findings related to program impact controlled for plausible and observed alternative explanations where we were able to use a quasi-experimental research design involving inverse propensity weighting (IPW).

The results produced by this procedure are presented in Tables 1 and 2 under the column titled IPW. These results stand in contrast to the adjacent column titled Raw. The Raw estimates were produced without the IPW procedure. They are also presented in Tables 1 and 2. Change in estimates from Raw to IPW were due to the controlling of observed confounding variables.

CERTIFICATE/ASSOCIATE DEGREE COMPLETION

Receiving a scholarship award contributed to an increase in certificate or associate degree completion within two years of receiving the award by 23.1 percentage points and within four years by 23.3 percentage points, as shown in Table 1. These effect sizes represent an augmentation in degree completion of approximately 50 percent relative to the quasi-control group results, which had an expected degree completion rate within four years of 46 percent. In other words, the BHFSA Scholarship Program was associated with growth in the number of students who earned a certificate or associate degree by approximately 50 percent.

BACHELOR'S DEGREE COMPLETION

Receiving a scholarship award did not produce a statistically significant nor meaningful effect on bachelor's degree completion within four years of entering a public institution, as shown in Table 2 column IPW. Though raw estimates suggest an effect, grant aid effects disappear once observed confounding variables are controlled. The null effect of grant aid on bachelor's degree completion is likely due to the directing of assistance to juniors and seniors, students who are close to the end of their college careers. In general, by the time students reach junior or senior year in college, their likelihood of degree completion is relatively high. In the case of our study population, the quasi-control group had a likelihood of bachelor's degree completion within four years equal to 85 percent -- a level hard to improve.

MASTER'S DEGREE COMPLETION

Receiving a scholarship award was associated with an increase in master's degree completion within two years of entering a public institution's master's program by 19.2 percentage points, as shown in Table 2 column IPW. This effect size represents a rise in degree completion of 30.6 percent relative to the quasi-control group, which had an expected degree completion rate of 62.7 percent.

DOCTORATE DEGREE COMPLETION

Receiving a scholarship award did not produce a statistically significant nor meaningful effect on doctoral degree completion within four years of entering a doctoral program, as shown in Table 2 column IPW.

Similar to the bachelor's degree analysis, the null effect of grant aid on doctoral degree completion is likely due to timing. Doctoral students are close to the end of their postsecondary education by the time they enroll in graduate medical school. In our study sample, the quasi-control group had a likelihood of degree completion within four years equal to 84 percent -- once again, a level hard to improve.

	Raw	IPW
Degree Attainment		
Degree(s) Attained Within 2 Years	0.332***	(0.040)
from Scholarship Receipt	0.231***	(0.043)
Comparison Group Mean	0.291	0.430
Obs.	13,591	13,591
Degree(s) Attained Within 4 Years	0.337***	(0.044)
from Scholarship Receipt	0.233***	(0.041)
Comparison Group Mean	0.353	0.468
Obs.	13,591	13,591
Owe Student Loan Debt[1]	0.025	(0.038)
(When BHFSA Scholarships Were Awarded)	–0.035	(0.041)
Comparison Group Mean	0.231	0.291
Obs.	9,296	9,296

Table 1.
The effect of BHFSA scholarships on attaining a community college certificate or associate degree

Note. IPW – Inverse Probability Weighting. Robust standard errors are reported in parenthesis. Students' Characteristics, listed in Table A1, and majors are used as covariates in IPW estimation.
* denotes significance at 10 percent, ** at 5 percent, and *** at 1 percent level.
l: Total observations are different from those used in degree attainment due to missing information in student loan debt data.

BSHP AWARDEES

As mentioned earlier, we were unable to estimate program effects for BSHP students due to missing data related to classification and degree level. As an alternative, we chose to evaluate the relationship between level of degree earned and award amount.

As shown in Table 3, students who received a greater amount of scholarship aid were more likely to achieve higher postsecondary degrees. Based on the constructed structural model, we computed the averaged predicted probabilities of students' degree attainment by the total scholarship amount. Figure 16 shows that as scholarship aid increased the probability that students would attain no degree or a certificate degree within four years since the scholarship receipt decreased, while the likelihood of achieving an associate, bachelor, or higher degree increased.

Additionally, student age is adversely correlated with higher degree attainment, indicating that older students were less likely to attain higher degrees, while gender and racial factors did not influence degree achievement with statistical significance. The estimates also show that students who majored in nursing-related programs (CIP code of 51.16, 51.38, and 51.39) were more likely to attain a higher level of degree relative to students who majored in Allied Health Diagnostic, Intervention, and Treatment Professions (CIP code of 51.09).

STUDENT DEBT

For students enrolled in public institutions, there was limited variation in student debt acquired between our quasi-treatment and quasi-control groups. As a result, statistically significant effects on the amount of student debt could not be identified. As an alternative, we created a student outcome related to debt that could be evaluated -- a dummy variable that indicates the acquisition of student debt in the year the scholarship was received. The results of this analysis are found in Tables 1 and 2.

For public institutions, scholarship aid had no effect on acquiring student debt at the levels of a community college degree, master's degree, or doctoral degree. The only impact on student debt found was a positive effect on students pursuing a bachelor's degree.

Receiving a scholarship was associated with an increase in the share of students acquiring student debt in the initial award year by 7.8 percent. This effect size represents a growth rate of 9.7 percent relative to the quasi-control group, which had an expected share of 80.6 percent.

For BSHP students, we used descriptive statistics to observe the annual amount of student loans acquired by awardees during a five-year period defined by two years before and after the first scholarship award, as shown in Table 4. Approximately 15 percent of awardees had student loans that averaged between $7,100 and $7,700 prior to the year the students received the scholarship. Although student loans were slightly higher ($7,820) during the awarded year, the proportion of the awardees with student loan debt decreased to 11 percent.

The share of awardees acquiring student loans in the first and second year following their first award dropped to approximately 3 percent and then 2 percent. Loan amounts were also lower than in prior years.

HEALTHCARE EMPLOYMENT

Due to the small sample size, this study was unable to estimate a causal relationship between receiving a scholarship award and healthcare employment in the Foundation's service area nor in Texas in general. The following analysis is descriptive only. It relates awardee status to employment by healthcare employer without limit to the Foundation's service area in the two years following degree completion.

Nearly all awardees with employment data worked for a healthcare employer during the two years following degree completion, as shown in Figure 17. The share of community college graduates who were employed

	Raw	IPW
Degree Attainment		
Bachelor's Degree Attained Within	0.166**	0.005
Four Years from College Entry	(0.069)	(0.043)
Comparison Group Mean	0.720	0.850
Obs.	3,787	3,787
Master's Degree Attained Within	0.361***	0.192***
Two Years from College Entry	(0.066)	(0.044)
Comparison Group Mean	0.511	0.627
Obs.	2,715	2,715
Doctoral Degree Attained Within	0.022	−0.033
Four Years from College Entry	(0.061)	(0.058)
Comparison Group Mean	0.782	0.836
Obs.	2,004	2,004
Owed Student Loan Debt [m]		
(When BHFSA Scholarships Were Awarded)		
Undergraduate Programs	0.144**	0.078*
	(0.061)	(0.044)
Comparison Group Mean	0.765	0.806
Obs.	3,353	3,353
Master's Programs	0.072	0.045
	(0.050)	(0.046)
Comparison Group Mean	0.698	0.721
Obs.	2,054	2,054
Doctoral Programs	−0.128	0.050
	(0.050)	(0.074)
Comparison Group Mean	0.790	0.594
Obs.	1,507	1,566

Table 2.
The effect of BHFSA scholarships on attaining a bachelor's degree or above at public institutions

Note. IPW – Inverse Probability Weighting. Robust standard errors are reported in parenthesis. Students' Characteristics, listed in Table A2, are used as covariates in IPW estimation.
* denotes significance at 10 percent, and ** at 5 percent, and *** at 1 percent level.
m: Total observations are different from those used in degree attainment due to missing information in student loan debt data.

by a healthcare employer equaled 75 percent for awardees and 72 percent for comparison group members.

For public institution graduates, the share of bachelor's degree graduates who were employed by a healthcare employer equaled 93 percent for awardees and 92 percent for comparison group members. The share of master's degree graduates who were employed by a healthcare employer equaled 82 percent for awardees and 88 percent for comparison group members. The share of doctoral degree graduates who were employed by a healthcare employer equaled 100 percent for awardees and 85 percent for comparison group members.

	Coefficient	(Robust SE)
Scholarship		
Total Amount of Scholarship Awarded ($/1000)	0.418***	(0.104)
Year(s) of Scholarship Receipt	0.816***	(0.195)
Student's Characteristics		
Age	-0.025***	(0.008)
Female	0.081	(0.180)
White	0.287	(0.283)
Hispanic	0.15	(0.283)
Academic Major: CIP Code of 51.09	-0.944***	(0.210)
Academic Major: CIP Code of 51.16	1.871***	(0.282)
Academic Major: CIP Code of 51.38	2.248***	(0.245)
Award Year of 2009-2010	0.241	(0.184)
Award Year of 2010-2011	0.415**	(0.193)
Award Year of 2011-2012	1.447***	(0.268)
Award Year of 2012-2013	1.725***	(0.311)
Award Year of 2013-2014	1.939***	(0.543)
Pseudo R^2		0.258
Log-likelihood		-776.908
Chi-Square test: p-value		<0.001
Total Observations		**1,147**

Table 3.
Results from the ordered logit regression model that identifies factors affecting the level of higher education attainment

Note. Ancillary parameters, which are used to differentiate the adjacent levels of the dependent variable, are statistically significant and not reported due to space.

Table 4.
Student loan debt for BSHP awardees

Year	Avg Student Loan (SE)	Awardees who Acquired Student Loan
t-2	$7,654.34	14.30%
	(4513.3)	
t-1	$7,130.22	15.61%
	(4289.47)	
t	$7,819.93	10.99%
	(5355.58)	
t+1	$5,403.45	2.96%
	(4909.07)	
t+2	$6,413.89	2.01%
	(3071.53)	

Note. Year of first award is represented by year t. One year before and after first award is represented by year t-1 and t+1, respectively.
Standard deviation is reported in parenthesis. Means and standard deviations are computed based on students who had student loan debt only.

For BSHP graduates, healthcare employment reached approximately 90 percent by the second year after graduation for both awardees and non-awardees.

Similar healthcare employment rates between awardees and non-awardees does not mean that receiving an award did not affect employment in the health sector since this analysis is restricted to graduates. It does suggest, however, that the causal pathway that links scholarship aid to healthcare employment is likely defined by scholarship effects on degree completion—helping students to graduate from college who would not have otherwise graduated expands the healthcare workforce.

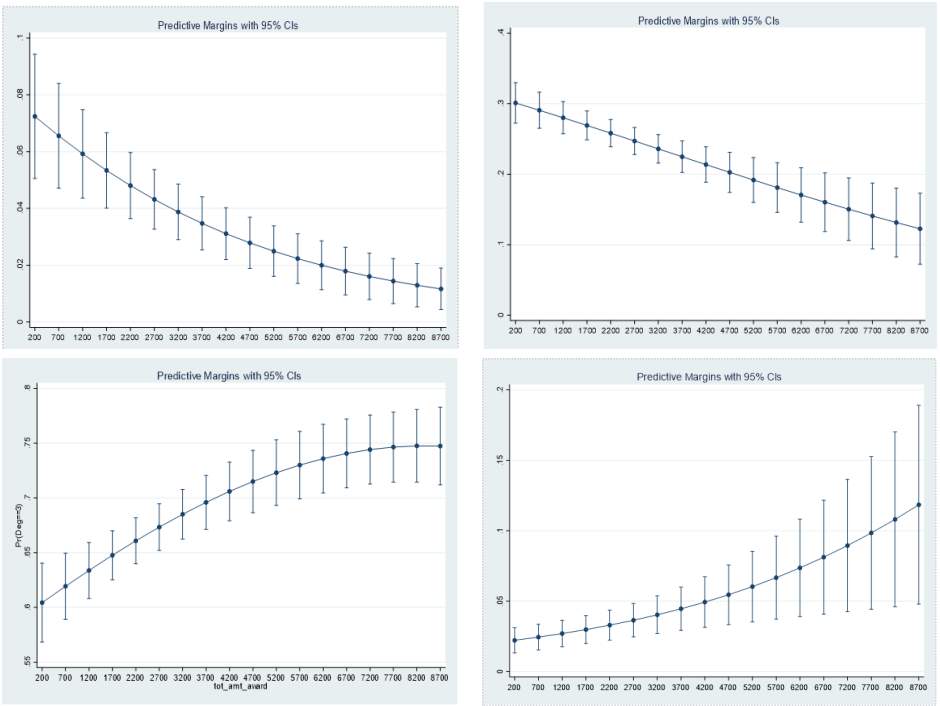

Figure 16.
Predicted probability of BSHP students' higher education degree attainment by scholarship aid

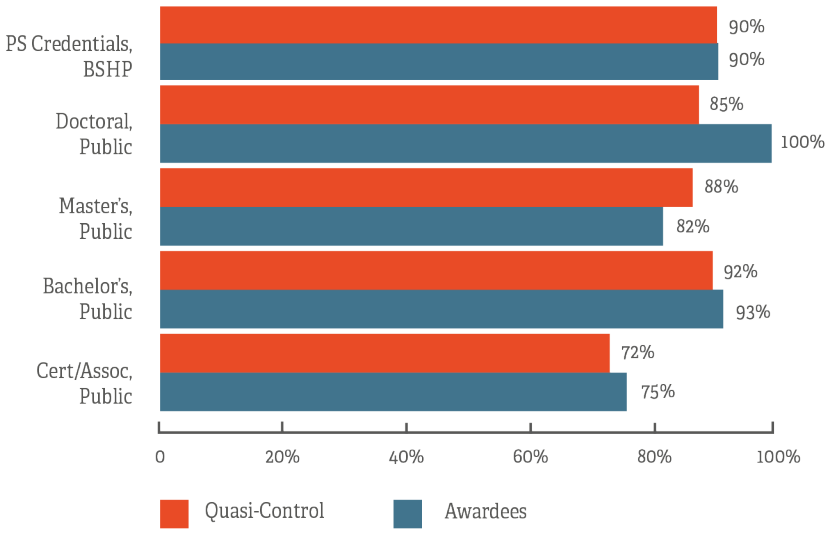

Figure 17.
Share of graduates employed in healthcare two years following degree completion by scholarship awardee status, degree level and institution type

APPENDIX

	BHFSA Scholarship Awardee	BHFSA Scholarship Non-Awardee
Age	31.589 (9.824)	27.865 (9.082)
Female	0.685 (0.466)	0.699 (0.459)
White	0.702 (0.459)	0.578 (0.494)
African American	0.113 (0.318)	0.118 (0.323)
Hispanic	0.476 (0.501)	0.572 (0.495)
Disabled	0.008 (0.090)	0.011 (0.106)
Limited English Proficiency	0.040 (0.198)	0.026 (0.158)
Single Parent	0.097 (0.297)	0.070 (0.256)
Economically Disadvantaged [f]	0.452 (0.500)	0.276 (0.447)
Academically Disadvantaged [g]	0.145 (0.354)	0.093 (0.291)
Multiple Majors	0.121 (0.327)	0.185 (0.388)
Semester Credit Hours (SCH) [h]	24.734 (7.012)	16.869 (9.191)
Full-Time Enrollment [i]	0.653 (0.478)	0.278 (0.448)
Multiple Enrollment	0.185 (0.390)	0.306 (0.461)
Previously Attained an Associate Degree	0.202 (0.403)	0.090 (0.286)
Total [j]	**124**	**13,467**

Table A1. Descriptive statistics of selected characteristics for students attending community colleges by the award of BHFSA scholarships

Note. Standard deviation is reported in parenthesis.
f: Economically disadvantaged students are defined if annual income at or below the federal poverty line, are eligible for Aid to Families with Dependent Children or other public assistance programs (includes WIC program participants), have received a Pell Grant or comparable state program of need-based financial assistance, and/or are a participant of or eligible for JTPA programs included under Title II, and eligible for benefits under the Food Stamp Act of 1977 or the Health and Humans Services (HHS) Poverty Guidelines.
g: Academically disadvantaged students are identified based on Texas Success Initiative Assessment (TSIA) or a local placement test, if they are identified as lacking college entry level skills in reading, writing, or math; if they were enrolled in developmental education courses; or if they did not receive a high school diploma nor receive a GED certificate.
h: Earned semester credit hours during the fiscal year that the BHFSA scholarship was awarded.
i: A binary variable, assigning 1 if the student earned 24 semester credit hours or higher during the fiscal year that the BHFSA scholarship was awarded, and 0 if otherwise.
j: We exclude students whose majors were outside of health professions and related programs (CIP code of 51) and who resided outside of BHFSA service areas.

	Undergraduate Programs		Master's Programs		Doctoral Programs	
	Awardee	Non-Awardee	Awardee	Non-Awardee	Awardee	Non-Awardee
Demographic Characteristics						
Age	26.969	27.722	33.713	33.969	33.377	27.320
	(5.056)	(7.238)	(8.122)	(9.910)	(9.701)	(6.158)
Female	0.783	0.816	0.872	0.781	0.590	0.550
	(0.415)	(0.387)	(0.335)	(0.414)	(0.496)	(0.498)
White	0.478	0.466	0.596	0.452	0.492	0.495
	(0.503)	(0.499)	(0.493)	(0.498)	(0.504)	(0.500)
African American	–	0.057	0.085	0.066	0.098	0.037
	(–)	(0.232)	(0.281)	(0.248)	(0.300)	(0.189)
Academic Characteristics						
Undergraduate Senior	0.464	0.382	-	-	-	-
	(0.502)	(0.486)	(–)	(–)	(–)	(–)
SCH	34.667	23.860	26.606	19.225	16.721	10.201
	(7.636)	(9.434)	(12.270)	(12.728)	(14.527)	(13.360)
Full Time Enrollment	0.971	0.558	0.489	0.272	0.344	0.268
	(0.169)	(0.497)	(0.503)	(0.445)	(0.479)	(0.443)
CIP Code of 51.04[k]	–	–	–	–	0.148	0.168
	(–)	(–)	(–)	(–)	(0358)	(0.374)
CIP Code of 51.01	–	–	–	0.012	0.033	0.037
	(–)	(–)	(–)	(0.110)	(0.180)	(0.188)
CIP Code of 51.06	0.232	0.075	–	0.007	–	–
	(0.425)	(0.264)	(–)	(0.085)	(–)	(–)
CIP Code of 51.09	0.217	0.054	0.170	0.118	–	–
	(0.415)	(0.227)	(0.378)	(0.323)	(–)	(–)
CIP Code of 51.10	0.188	0.058	–	–	–	–
	(0.394)	(0.233)	(–)	(–)	(–)	(–)
CIP Code of 51.12	–	–	–	–	0.148	-0.400
	(–)	(–)	(–)	(–)	(0.358)	(0.490)
CIP Code of 51.16	0.116	0.436	0.266	0.277	0.213	0.022
	(0.323)	(0.496)	(0.444)	(0.448)	(0.413)	(0.145)
CIP Code of 51.23	–	–	0.149	0.187	0.246	0.129
	(–)	(–)	(0.358)	(0.390)	(0.434)	(0.335)
CIP Code of 51.38	0.246	0.377	0.404	0.186	0.246	0.011
	(0.434)	(0.485)	(0.493)	(0.389)	(0.434)	(0.106)
Residence						
BHFSA Service Areas	0.841	0.919	0.777	0.901	0.607	0.658
	(0.369)	(0.272)	(0.419)	(0.298)	(0.493)	(0.474)
Total	**69**	**3,718**	**94**	**2,621**	**61**	**1,943**

Table A2. Descriptive statistics of selected characteristics for students attending UTHSC by the award of BHFSA scholarships and classifications

Note. Standard deviation is reported in parenthesis.
k: Please see Table A3 for a description of academic majors.

Four-digit CIP Code	CIP Description	Two-Year Public Colleges	Four-Year Public Colleges	BSHP
Health Profession and Related Programs				
51.04	Dentistry	– (–)	9 (3.98)	– (–)
51.05	Advanced/Graduate Dentistry and Oral Sciences	– (–)	< 5 (< 3.14%)	– (–)
51.06	Dental Support Services and Allied Professions	7 (4.40%)	16 (7.08)	– (–)
51.07	Health and Medical Administrative Services	< 5 (< 3.14%)	– (–)	– (–)
51.08	Allied Health and Medical Assisting Services	18 (11.32%)	– (–)	– (–)
51.09	Allied Health Diagnostic, Intervention, and Treatment	52 (32.70%)	31 (13.72)	269 (23.4%)
51.10	Clinical/Medical Laboratory Sciences/Research, Allied Profs.	< 5 (< 3.14%)	15 (6.64)	– (–)
51.12	Medicine	– (–)	8 (3.54)	– (–)
51.15	Mental and Social Health Services and Applied Professions	38 (23.90%)	– (–)	– (–)
51.16	Nursing	– (–)	46 (20.35)	220 (19.2%)
51.23	Rehabilitation and Therapeutic Professions	– (–)	29 (12.83)	– (–)
51.38	Registered Nursing, Nursing Admin./Research/Clinical	< 5 (< 3.14%)	70 (30.97)	540 (47.1%)
51.39	Practical Nursing, Vocational Nursing and Nursing Assistants	12 (7.55%)	– (–)	158 (13.8%)
44.07	Social Work	– (–)	< 5 (< 3.14%)	– (–)
42.01	Psychology	< 5 (< 3.14%)	– (–)	– (–)
26.10	Pharmacology and Toxicology	– (–)	< 5 (< 3.14%)	– (–)
13.11	Student Counseling and Personnel Services	– (–)	5 (3.14%)	– (–)
Non-Health Professions and Related Programs				
11.02	Computer Programming	< 5 (< 3.14%)	– (–)	– (–)
24.01	Liberal Arts and Sciences, General Studies and Humanities	9 (5.66%)	– (–)	– (–)
43.02	Fire Protection	8 (5.03%)	– (–)	– (–)
52.02	Business Administration, Management and Operations	< 5 (< 3.14%)	– (–)	– (–)
99.99	Unclassified	8 (5.03%)	– (–)	– (–)
Health-Related Majors		**132 (83.02%)**	**234 (100%)**	**1,140 (100%)**
Total		**159**	**234**	**1,147**

Table A3. Distribution of BHFSA scholarships by academic areas

Note. Some students had multiple majors, and we consider the one in health professions and related programs (CIP code of 51) as their major academic field.

Table A4.
Covariate balance summary for model estimating scholarship effects on community college certificate or associate degree completion within two years

		Raw	Weighted
Number of obs	=	13,591	13,591.0
Treated obs	=	124	6,788.8
Control obs	=	13,467	6,802.2

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	.3936384	-.032089	1.170022	.7677933
Female	-.0289942	-.0166609	1.032746	1.013729
Academically Disadvantaged	.1607859	-.014897	1.481294	.9708616
Economically Disadvantaged	.3704074	-.0430339	1.249345	.9935181
Disability	-.0328666	-.0221958	.7226084	.7943132
Limited English Proficient	.0826769	-.0211318	1.567141	.908467
Single Parent	.0957774	-.0035656	1.349124	.9903566
Hispanic	-.1932399	.0006229	1.02703	1.000061
White	.2582408	-.0010351	.8654606	1.000914
African American	-.0158932	-.0267833	.9701439	.9382151
Multiple Majors	-.1782104	-.0673546	.7110213	.863741
Multiple Enrollment	-.2817554	-.0842881	.7174314	.8823707
Associate Attainment	.3194367	.0212097	1.981262	1.032783
Community College Major				
cc_maj_5108	.003192	-.0192224	1.014303	.9643407
cc_maj_5109	-.0546124	.0112882	.9914057	1.004211
cc_maj_5115	.3811866	-.0128973	1.689401	.9894217
cc_maj_5139	.1557875	.032412	2.008959	1.126922
cc_inst_9163	-.058962	-.0104999	1.02733	1.002849
cc_inst_3608	-.1484007	-.0619164	1.006103	.9938491
Residence				
Bexar County	-.2349459	-.0309665	2.404699	1.091237
Comal County	.0626422	-.0083378	1.565003	.9503521
Guadalupe County	.0644158	.0146311	1.587546	1.097445
Wilson County	.0867826	.0085969	4.184879	1.10185
Fiscal Year				
2010	-.038175	-.0042657	.9326863	.9910764
2011	-.0599119	.0187752	.864164	1.053636
2012	-.2857922	.0121438	.4434805	1.048528
2013	-.3595141	-.0071033	.383528	.9732925
2014	-.0364041	.0045596	.9106945	1.013345
2015	.2497672	.0133198	3.416519	1.045569
2016	-.1927667	-.0224637	.4499354	.8912781
2017	.1668713	-.0073172	1.507235	.9854717
2018	.24651	-.0208258	1.59559	.9713592
Full-Time	.810053	-.0478294	1.137627	1.033908
Prev Earned SCH	.9620608	-.0705137	.5821024	.5979472

Table A5.
Covariate balance summary for model estimating scholarship effects on community college certificate or associate degree completion within four years

		Raw	Weighted
Number of obs	=	13,591	13,591.0
Treated obs	=	124	6,788.8
Control obs	=	13,467	6,802.2

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	.3936384	-.032089	1.170022	.7677933
Female	-.0289942	-.0166609	1.032746	1.013729
Academically Disadvantaged	.1607859	-.014897	1.481294	.9708616
Economically Disadvantaged	.3704074	-.0430339	1.249345	.9935181
Disability	-.0328666	-.0221958	.7226084	.7943132
Limited English Proficient	.0826769	-.0211318	1.567141	.908467
Single Parent	.0957774	-.0035656	1.349124	.9903566
Hispanic	-.1932399	.0006229	1.02703	1.000061
White	.2582408	-.0010351	.8654606	1.000914
African American	-.0158932	-.0267833	.9701439	.9382151
Multiple Major	-.1782104	-.0673546	.7110213	.863741
Muliple Enrollment	-.2817554	-.0842881	.7174314	.8823707
Associate Attainment	.3194367	.0212097	1.981262	1.032783
Community College Major				
cc_maj_5108	.003192	-.0192224	1.014303	.9643407
cc_maj_5109	-.0546124	.0112882	.9914057	1.004211
cc_maj_5115	.3811866	-.0128973	1.689401	.9894217
cc_maj_5139	.1557875	.032412	2.008959	1.126922
cc_inst_9163	-.058962	-.0104999	1.02733	1.002849
cc_inst_3608	-.1484007	-.0619164	1.006103	.9938491
Residence				
Bexar County	-.2349459	-.0309665	2.404699	1.091237
Comal County	.0626422	-.0083378	1.565003	.9503521
Guadalupe County	.0644158	.0146311	1.587546	1.097445
Wilson County	.0867826	.0085969	4.184879	1.10185
Year				
2010	-.038175	-.0042657	.9326863	.9910764
2011	-.0599119	.0187752	.864164	1.053636
2012	-.2857922	.0121438	.4434805	1.048528
2013	-.3595141	-.0071033	.383528	.9732925
2014	-.0364041	.0045596	.9106945	1.013345
2015	.2497672	.0133198	3.416519	1.045569
2016	-.1927667	-.0224637	.4499354	.8912781
2017	.1668713	-.0073172	1.507235	.9854717
2018	.24651	-.0208258	1.59559	.9713592
Full-Time	.810053	-.0478294	1.137627	1.033908
Prev. earned SCH	.9620608	-.0705137	.5821024	.5979472

Table A6.
Covariate balance summary for model estimating scholarship effects on bachelor's degree completion within four years

		Raw	Weighted
Number of obs	=	3,787	3,787.0
Treated obs	=	69	1,883.6
Control obs	=	3,718	1,903.4

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	-.1643267	.0113643	.4879845	.745685
Female	-.083882	-.0003873	1.150932	1.000537
White	.0247861	.0121694	1.017263	1.001214
Hispanic	.1004316	-.0094735	1.212482	.9851611
Prev Earned SCH	1.259202	-.0137656	.6552362	1.12081
h_maj_5106	.4425155	.0027169	2.594633	1.003475
h_maj_5109	.4872091	.009314	3.359145	1.012984
h_maj_5110	.4043671	-.0322968	2.859548	.9514189
h_maj_5138	-.2835307	.0175086	.8021065	1.02126
Undergrad. Senior	.1644961	-.0109603	1.06813	.9985343
BHFSA Area Resid.	-.2428709	.0201996	1.832615	.9638314
Year				
2008	-.1155331	-.0122039	.7499068	.9652965
2009	.0856712	-.0086322	1.192356	.9853857
2010	.0100938	.0050491	1.033939	1.009496
2011	.0592276	.015813	1.130909	1.028046
2012	.0385592	-.0005328	1.093327	.9990149
2013	.1434641	.0007272	1.276988	1.001004
Full-Time Enroll.	1.113052	-.0023966	.1157692	1.013609

		Raw	Weighted
Number of obs	=	2,715	2,715.0
Treated obs	=	94	1,315.9
Control obs	=	2,621	1,363.1

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	-.0295561	.0091463	.7810938	.7608369
Female	.2434577	.0105262	.6570208	.9770228
White	.2890283	.012563	.9821833	.9952771
Hispanic	-.2403041	-.0035962	.5736343	.989406
Prev. Earned SCH	.5904347	-.0332295	.9292917	.724394
Major				
h_maj_5109	.1477648	-.0319639	1.368392	.9471142
h_maj_5116	-.0247497	.0138989	.9849196	1.015097
h_maj_5138	.4916948	-.0073572	1.608443	.9971943
h_maj_5123	-.1025442	-.0114813	.8412294	.977862
BHFSA Area Resid.	-.3426247	-.000735	1.96843	1.000984
Year				
2008	-.131832	.0035021	.7348423	1.009715
2009	.0201844	.001106	1.049927	1.002067
2010	.0466542	.0078495	1.101222	1.013994
2011	.0122156	.0109885	1.035382	1.022167
2012	-.0225285	-.0048009	.9585792	.9886821
2013	.340279	-.0175646	1.72566	.9819495
Full-Time Enroll.	.4569299	-.0086012	1.273819	.9997139

Table A7.
Covariate balance summary for model estimating scholarship effects on master's degree completion within two years

		Raw	Weighted
Number of obs	=	2,004	2,004.0
Treated obs	=	61	966.6
Control obs	=	1,943	1,007.4

	Standardized Differences Raw	Weighted	Variance Ratio Raw	Weighted
Age	.7455563	.0120024	2.48189	.7566562
Female	.0815234	-.0506273	.9928969	1.021476
White	-.0065871	.0496195	1.015967	1.004113
Hispanic	-.0151363	-.0312256	.9759498	.9216488
SCH	.4672007	.0298329	1.182409	1.178897
Major				
h_maj_5104	-.0567087	.0083747	.9130566	1.016948
h_maj_5116	.6186211	-.0128503	8.057385	.9823988
h_maj_5138	.7423145	-.0023138	16.83217	.9972898
h_maj_5123	.3023489	.0042254	1.680711	1.005037
BHFSA Area Resid.	-.106918	.0007622	1.077991	.9996788
Year				
2008	.1309284	.0136914	1.46692	1.034163
2009	.0733071	.0030716	1.147174	1.004726
2010	-.1286029	.0052607	.771831	1.012885
2011	-.2341475	-.0040281	.6459079	.9903551
2012	.2736625	-.0692208	1.881248	.8982249
2013	.1585591	.0603139	1.296431	1.086458
Full-Time Enroll.	.1649629	.0478117	1.168915	1.034508

Table A8.
Covariate balance summary for model estimating scholarship effects on doctoral degree completion within two years

Table A9.
Covariate balance summary for model estimating scholarship effects on acquiring student debt by community college students

		Raw	Weighted
Number of obs	=	9,296	9,296.0
Treated obs	=	117	4,654
Control obs	=	9,179	4,642

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	.4145141	-.0328807	1.202421	.7854753
Female	-.0924671	-.0040359	1.100783	1.003388
Academically Disadvantaged	.1060953	.0000299	1.296427	1.000063
Economically Disadvantaged	.1489544	-.0349131	1.066757	.9934454
Disability	-.0379619	-.0303964	.6967627	.7402882
Limited English Proficient	.0822416	-.0217491	1.539254	.9088512
Single Parent	.0704051	-.0034897	1.231201	.9909299
Hispanic	-.2361363	.0009571	1.045046	1.000082
White	.2652959	-.0065057	.8740882	1.005486
African American	-.0523202	-.0210197	.8916946	.9503455
Multiple Major	-.2262063	-.064215	.6580346	.8682925
Multiple Enrollment	-.3096269	-.0916259	.7057496	.8753115
Associate Attainmeant	.3640812	.0125907	2.331554	1.019671
Comm College Major				
cc_maj_5108	.0614753	-.0245999	1.137186	.957005
cc_maj_5109	-.0436683	-.0027672	.9960378	.9990968
cc_maj_5115	.3469308	-.0051606	1.642293	.9952823
cc_maj_5139	.1381299	.0513465	1.885595	1.225527
cc_inst_9163	-.1167769	-.0121592	1.045483	1.002448
cc_inst_3608	-.1225756	-.0697278	1.01313	.998899
Residence				
Bexar County	-.2648968	-.041944	2.694039	1.12176
Comal County	.080253	-.0117515	1.777654	.9331382
Guadalupe County	.0776115	.0109764	1.738727	1.069435
Wilson County	.0928609	.0139945	4.622941	1.168413
Year				
2010	-.1610007	-.0085347	.7030079	.9780764
2011	-.0447609	.0263233	.9014031	1.073482
2012	-.2797199	.0139983	.4610234	1.054277
2013	-.3642094	-.0050571	.3922166	.9815122
2014	-.0238235	.0033218	.9452432	1.009318
2015	.2851661	.0242164	4.286376	1.082244
2016	-.1599793	-.0262043	.5141375	.8785857
2017	.2008491	-.0103432	1.628101	.9805465
2018	.2742283	-.0277446	1.690899	.963066
Full-Time	.6875651	-.0532744	1.022561	1.039465
Prev Earned SCH	.8060728	-.0639591	.5774308	.618939

		Raw	Weighted
Number of obs	=	3,353	3,353.0
Treated obs	=	69	1,666.0
Control obs	=	3,284	1,687.0

	Standardized Differences Raw	Weighted	Variance Ratio Raw	Weighted
Age	-.1548203	.0116056	.5212909	.8021006
Female	-.1054326	-.0001005	1.193246	1.000145
White	.0411138	.0125208	1.019787	1.001256
Hispanic	.1206438	-.0117792	1.262574	.981626
Prev Earned SCH	1.235983	-.0158991	.667557	1.126063
Major				
h_maj_5106	.4363445	.0035963	2.541004	1.004607
h_maj_5109	.4925523	.0073258	3.439469	1.01018
h_maj_5110	.3984062	-.0337582	2.790533	.9493515
h_maj_5138	-.3080353	.0194297	.7927822	1.023675
Undergrad. Senior	.1770894	-.0136679	1.074779	.9982103
BHFSA Area Resid.	-.2526931	.0237779	1.891215	.9577097
Year				
2008	-.0817291	-.0121545	.8132826	.9654333
2009	.1291984	-.0139726	1.309283	.9765748
2010	-.0434444	.0068891	.9385829	1.013003
2011	.0073309	.0169893	1.027419	1.030203
2012	.054028	-.0002853	1.128533	.9994767
2013	.1418807	.0027398	1.273211	1.003781
Full-Time Enroll.	1.086822	-.0028374	.1164074	1.016145

Table A10.
Covariate balance summary for model estimating scholarship effects on acquiring student debt by four-year undergraduate college students

Table A11.
Covariate balance summary for model estimating scholarship effects on acquiring student debt by students pursuing a master's degree

		Raw	Weighted
Number of obs	=	3,353	3,353.0
Treated obs	=	69	1,666.0
Control obs	=	3,284	1,687.0

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	.095933	.0031379	.8542448	.7779138
Female	.1857168	.013363	.7141466	.9709964
White	.305645	.0136039	.9853835	.9948992
Hispanic	-.2161076	-.0051242	.6002528	.9849578
Prev Earned SCH	.4255827	-.0257269	.9170265	.7539833
Major				
h_maj_5109	.0664356	-.0238813	1.144914	.959895
h_maj_5116	.0130302	.008968	1.024544	1.00966
h_maj_5138	.4262733	-.0031157	1.460298	.9987994
h_maj_5123	-.1845297	-.0095082	.7452305	.9815933
BHFSA Area Resid.	-.2981532	-.0008345	1.751983	1.001115
Year				
2008	-.0714555	.0018731	.8412676	1.005178
2009	.0972539	-.0022017	1.234389	.9959268
2010	-.0765487	.0079482	.8917891	1.014173
2011	-.0983958	.0097949	.8467661	1.019714
2012	.0101302	-.0080873	1.035251	.9810636
2013	.3387641	-.010511	1.719748	.9890656
Full-Time Enroll.	.3360843	-.0045482	1.148881	.999832

Table A12.
Covariate balance summary for model estimating scholarship effects on acquiring student debt by students pursuing doctoral degree

		Raw	Weighted
Number of obs	=	1,566	1,566.0
Treated obs	=	59	761.6
Control obs	=	1,507	804.4

	Standardized Differences Raw	Standardized Differences Weighted	Variance Ratio Raw	Variance Ratio Weighted
Age	.8819841	-.0908798	3.879401	.6711578
Female	.0495337	-.0656462	1.0001	1.02994
White	.0194681	.104463	1.01763	1.01466
Hispanic	.0341056	-.0114451	1.116356	.970679
Prev Earned SCH	.5692702	.0401535	1.137227	1.207492
Major				
h_maj_5104	-.131868	.0286614	.812094	1.058787
h_maj_5116	.5882896	.0302708	10.2596	1.051672
h_maj_5138	.773933	-.0913676	22.53763	.9117149
h_maj_5123	.2494767	.0251484	1.479803	1.029752
BHFSA Area Resid.	-.0006429	-.0207231	1.016863	1.00994
Year				
2008	.2370541	.0540249	2.139953	1.144452
2009	.0965132	.0299443	1.227667	1.055997
2010	-.2320984	.0168576	.6552997	1.04138
2011	-.3583061	.016119	.5569685	1.039504
2012	.3552054	-.1775173	2.399944	.7881715
2013	.213845	.0897368	1.422591	1.130351
Full-Time Enroll.	.2522251	.0911827	1.274467	1.066304

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