

Estimates of the Impact of Participating in the
College Crusade GEAR UP Program for
Gender/Race-Ethnicity Subgroups of Crusaders,
2007-08 to 2012-13 Sixth Grade Cohorts Combined

Prepared for: College Crusade of Rhode Island
GEAR UP Program

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Introduction

The Center for Labor Markets and Policy recently completed its most comprehensive evaluation of the impact of participating in the College Crusade GEAR UP program on educational outcomes of six successive cohorts of Crusaders; those who had enrolled in the program as rising sixth graders each year between 2007-08 and 2012-13. The evaluation study utilized a quasi-experimental method, selecting six matched comparison groups of students for each of the six cohorts of Crusaders. The matched comparison group was selected from sixth grade students in participating schools using the propensity score matching method. For each individual cohort, the study found sizeable positive impacts of the program on the following three outcome measures: on-time 12th grade attainment, on-time high school graduation, and immediate college enrollment.¹ Although the size of each of these cohorts was sufficiently large to produce reliable estimates of impact for all Crusaders and certain large subgroups of Crusaders, it was not large enough to produce estimates of impact for smaller subgroups of Crusaders.

The College Crusade leadership has expressed an interest in the measurement of the impact of program participation on key outcomes among gender and race-ethnicity subgroups of Crusaders. To produce statistically reliable impact measures by gender/race-ethnicity, we combined data for all six cohorts of Crusaders into a single data file yielding data for 2,159 Crusaders and an identically sized matched comparison group. Aggregating all six participant and comparison group cohorts into a single participant and single comparison group yielded a sufficient number of observations to produce statistically reliable estimates of program participation impacts for male and female Crusaders in Black, Hispanic, and White race-ethnicity groups. Among Asian/Pacific Islanders, the number of Crusaders was large enough to produce impact estimates for the entire group, but not large enough to produce statistically reliable estimates of impacts for Asian/Pacific Islander males and females separately.

Gender and Race-Ethnicity Characteristics of Crusaders

The gender and race-ethnicity characteristics of Crusaders in the six combined cohorts are presented in Charts 1 and 2. Chart 1 presents the percentage distribution of Crusaders in

¹ Two outcome measures (college enrollment rate and college freshman year retention rate) are not presented in this research brief because the base (denominator) used to measure these outcomes is a subset of the universe of all Crusaders in these six cohorts; the base used to measure the college enrollment rate is on-time high school graduates and the base used to measure the college freshman year retention rate is on-time high school graduates who had enrolled in college immediately after graduating high school. The number of students in these subsets of the universe of all Crusaders from the six cohorts were not large enough to produce statistically reliable estimates for gender/race-ethnicity subgroups of Crusaders. As data for additional cohorts become available, we will update this research brief by including these two outcome measures.

the six combined cohorts by gender and race-ethnicity. Females represent a majority of Crusaders from these six cohorts; 56 percent of Crusaders were female, and the remaining 44 percent were male. The distribution of Crusaders by their race-ethnicity traits found that a large majority (two-thirds) of Crusaders were Hispanic. Out of a total of 2,159 Crusaders, 1,423 or 65.9 percent were Hispanic. The second largest group consisted of Black Crusaders, accounting for nearly 22 percent of all Crusaders in the six combined cohorts. The remaining Crusaders comprised of Whites (7.8%), Asian/Pacific Islanders (3.6%), and Native Americans (0.9%).

Chart 1: Percentage Distribution of Crusaders (2007-08 to 2012-13 Cohorts Combined), by Gender and by Race-Ethnicity (Total Number: 2,159, Number of Crusaders in Parentheses)

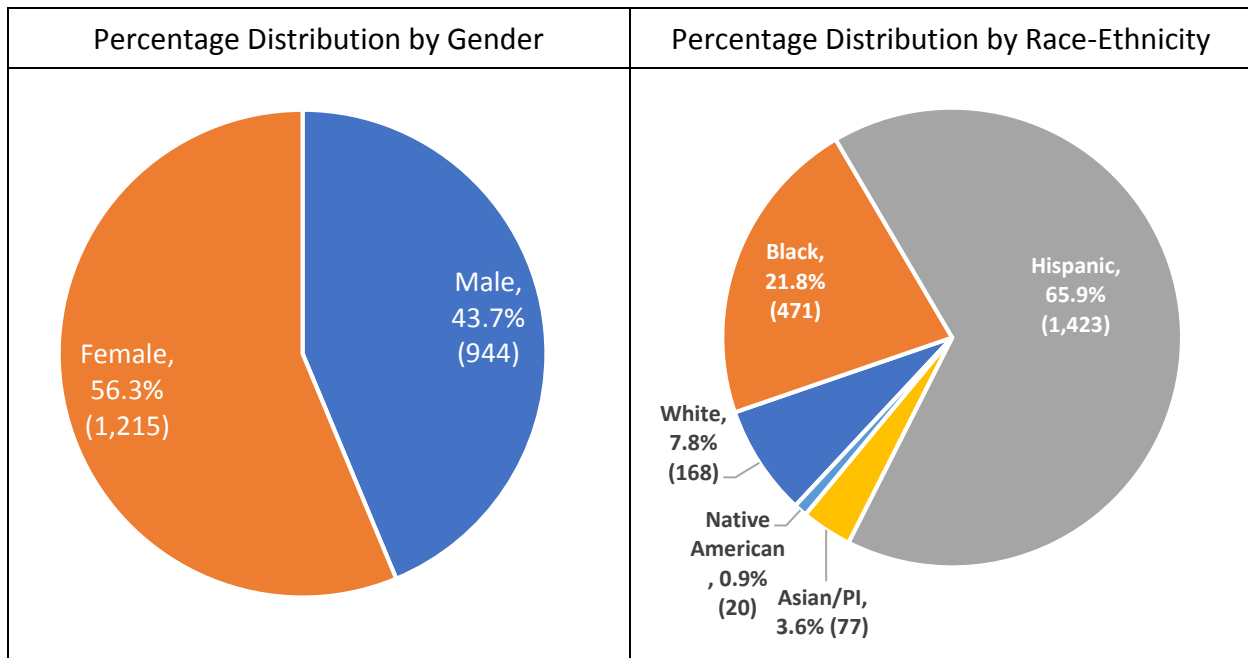
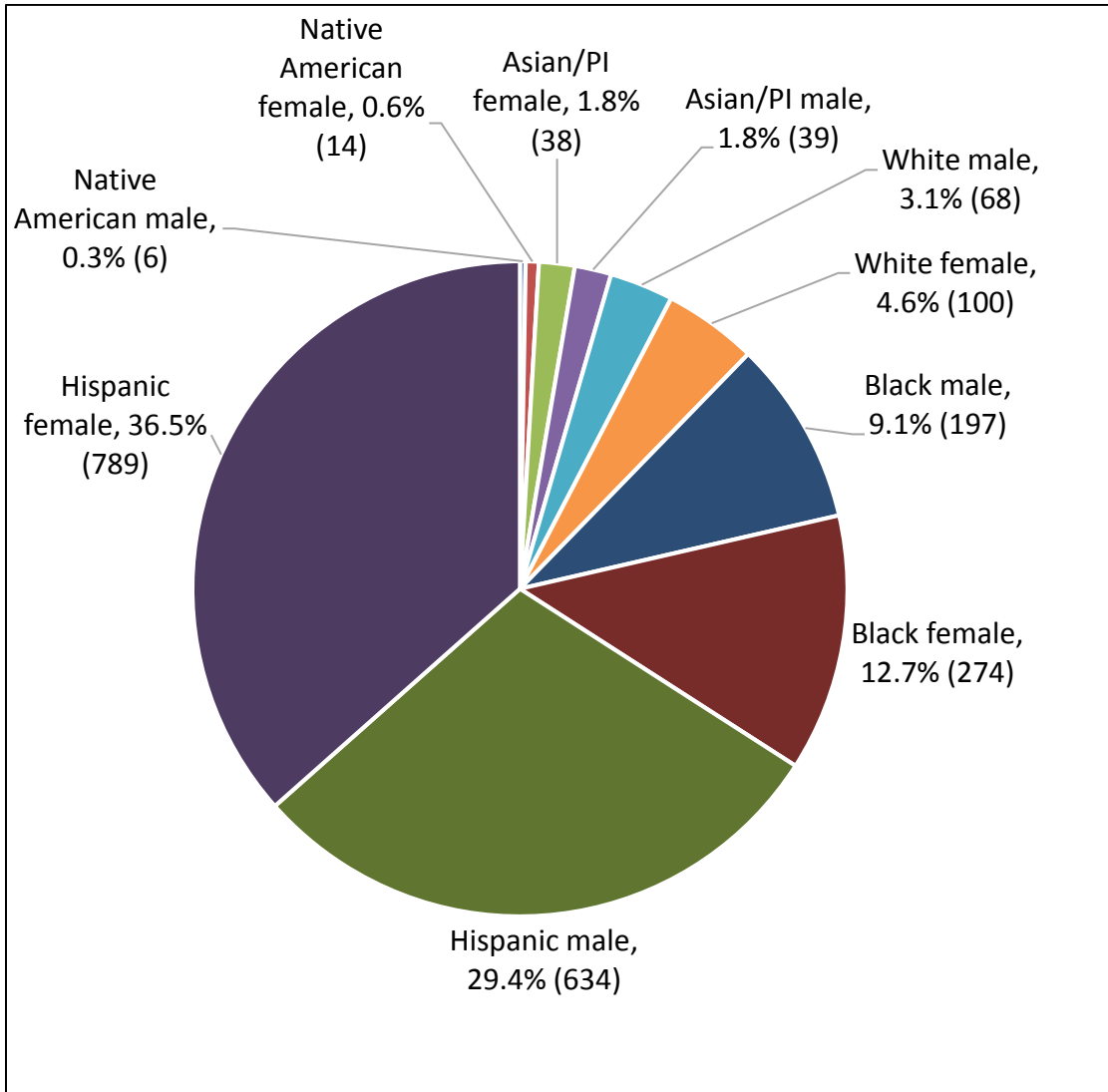


Chart 2 presents the gender/race-ethnicity characteristics of Crusaders with a percentage distribution of 2,159 Crusaders across 10 gender/race-ethnicity groups. Given the findings in Chart 1 of a majority of Hispanic students and female students among the six cohorts of Crusaders, it is not surprising that Hispanic females comprised the largest group of Crusaders followed by Hispanic men; 37 percent and 29 percent, respectively. Black females accounted for 13 percent of all Crusaders while Black males comprised 9 percent of all Crusaders. The share of White females and males was 4.6 and 3.1 percent, respectively. Asian/Pacific Islander females and males accounted for 1.8 percent (each) of all Crusaders, and the remaining 1 percent of all Crusaders was split between Native American females (0.6%) and males (0.3%).

Chart 2: Percentage Distribution of Crusaders (2007-08 to 2012-13 Cohorts Combined), by Gender/Race-Ethnicity (Total Number: 2,159, Number of Crusaders in Parentheses)



Estimates of Impact

The rest of this research brief presents estimates of the impact of participating in College Crusade GEAR UP program on educational outcome of Crusaders from the six combined cohorts and, for the first time, of gender/race-ethnicity groups of Crusaders from these six combined cohorts – those who had enrolled in the program as rising sixth graders in school years 2007-08 through 2012-13. The six cohorts include a total of 2,159 Crusaders and the same number of students in the six matched comparison groups (combined). The size of each of the six cohorts is presented in Table 1. Impact estimates are presented for three educational outcomes: on-time 12th grade attainment, on-time high school graduation, and college

enrollment immediately after graduating high school. The timetable of the attainment of these outcomes for each of the six cohorts is presented in Table 1.

Table 1: Number of Crusaders in Each Cohort between School Year 2007-08 and 2012-13

Cohort (School Year of Entry into Program)	Crusaders	Matched Comparison Group	On-time 12 th grade attainment defined as enrolled in the 12 th grade in:	On-time high school graduation	Immediate college enrollment
2007-08	249	249	SY 2013-14	Spring 2014	Fall 2014
2008-09	205	205	SY 2014-15	Spring 2015	Fall 2015
2009-10	291	291	SY 2015-16	Spring 2016	Fall 2016
2010-11	405	405	SY 2016-17	Spring 2017	Fall 2017
2011-12	560	560	SY 2017-18	Spring 2018	Fall 2018
2012-13	449	449	SY 2018-19	Spring 2019	Fall 2019
Total	2,159	2,159			

On-Time 12th Grade Attainment

Reaching the 12th grade on time means that the student has demonstrated a level of academic proficiency to successfully complete the requisite number and types of courses and earn enough course credits during each grade in middle and high school to move on to the next grade. Students with a poor academic performance are retained in the same grade and continue to be retained until they earn these credits. Research literature has consistently found grade retention to be an important predictor of whether students will ever graduate high school. While grade retention by itself cannot be considered a cause of dropping out, the grade retention measure is closely connected to factors such as poor academic performance, lack of motivation, poor engagement in school, and negative behavioral traits; all of which ultimately contribute to dropping out of school.²

Students from the six cohorts who had entered 12th grade on time (that is, entered 12th grade in the school year during which they were expected to be enrolled in the 12th grade) must have completed each grade on time from the sixth grade onwards. Conversely, students who

² Rumberger, Russel W. *Dropping Out: Why Students Drop Out of High School and What Can be Done About It*. Boston, MA: Harvard University Press, October 2011; Burrus, Jeremy and Richard D. Roberts, *Dropping Out of High School: Prevalence, Risk Factors, and Remediation Strategies*, Educational Testing Service, R & D Connections, No. 18, February 2012. Retrieved from https://www.ets.org/Media/Research/pdf/RD_Connections18.pdf; Neild, Ruth Curran and Robert Balfanz, *Unfulfilled Promise: The Dimensions and Characteristics of Philadelphia's Dropout Crisis, 2000-2005*, Philadelphia Youth Network, The Johns Hopkins University, and University of Pennsylvania, 2006.

were not enrolled in the 12th grade on time must have fallen behind and were either enrolled in a lower grade or were no longer enrolled in the Rhode Island public school system—dropped out of school entirely or otherwise exited the Rhode Island public school system.

Among Crusaders from the six cohorts, 84 percent had entered 12th grade on time, nearly 7 percentage points higher than the on-time 12th grade attainment rate (77.3%) among their comparison group counterparts (Table 2). Male Crusaders were less likely to reach 12th grade on time compared to female Crusaders (80.6% versus 86.6%) as were male students compared to female students in the comparison group. The Crusader advantage over the comparison group (impact) was slightly higher among females (7.1 percentage points) than males (6.1 percentage points). The Crusader advantage for the outcome of on-time 12th grade attainment for all, male, and female Crusaders are statistically significant at .01 level.

Each of the three race-ethnicity groups of Crusaders performed better than their comparison group counterparts. Nearly 83 percent of Black Crusaders from the six cohorts had entered the 12th grade on time; nearly 9 percentage points higher than the rate of on-time 12th grade attainment among Black students in the comparison group; the difference is significant at .01 level). Among Hispanic students, the share who reached 12th grade on time was 84.5 percent among Crusaders and 79.3 percent among the comparison group; representing an impact of 5.2 percentage points (significant at .01 level). Among White Crusaders, 79.2 percent had reached 12th grade on time; lower than Black and Hispanic Crusaders. However White Crusaders performed better than their comparison group peers among whom only 67.5 percent had reached 12th grade on time, representing a Crusader advantage of 11.7 percentage points; significant at .05 level (Table 2).

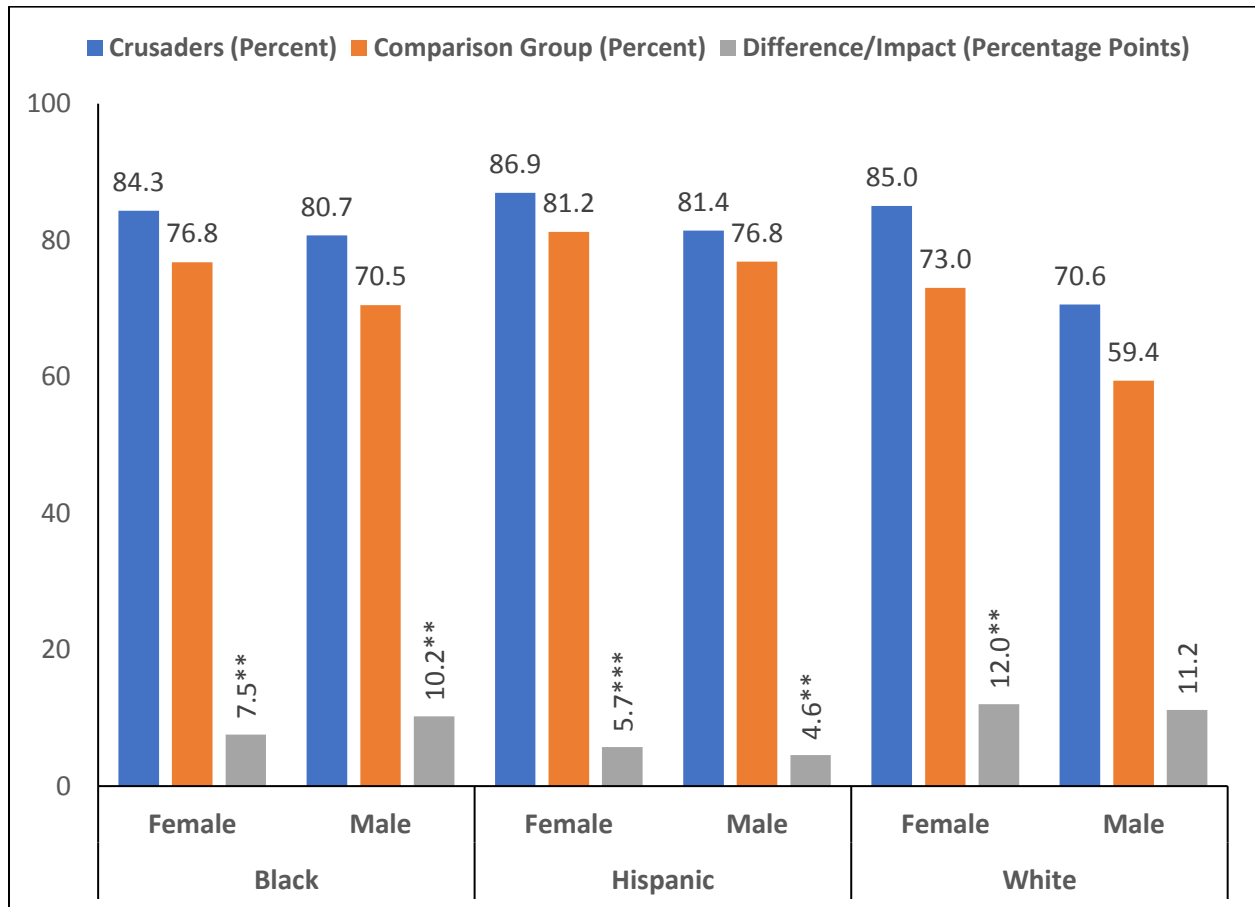
Table 2: On-Time 12th Grade Attainment Rates of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined), by Gender and Race-Ethnicity

Gender and Race-Ethnicity	Crusader	Matched Comparison Group	Difference (Crusader Minus Comparison Group)
All	84.0	77.3	6.7***
Gender			
Male	80.6	74.5	6.1***
Female	86.6	79.5	7.1***
Race-Ethnicity			
Black	82.8	74.1	8.7***
Hispanic	84.5	79.3	5.2***
White	79.2	67.5	11.7**

***p <.01, **p<.05, *p<.10

Chart 3 presents on-time 12th grade attainment rates for six gender/race-ethnicity groups of Crusaders and comparison group students. Crusaders in each of the six gender/race-ethnicity groups had higher on-time 12th grade attainment rates than their counterparts in the comparison group. The findings in Chart 3 also show that females outperformed males in each of the three race-ethnicity groups among Crusaders as well as the comparison group,

Chart 3: On-Time 12th Grade Attainment Rates of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined), by Gender/Race-Ethnicity



***p < .01, **p < .05, *p < .10

Among Black females, 84.3 percent of Crusaders had enrolled in the 12th grade on time compared to 76.8 percent of comparison group students; a difference of 7.5 percentage points in favor of Crusaders (significant at .05 level). Among Black males, the Crusader advantage stood at 10.2 percentage points (80.7% versus 70.5%); significant at .05 level.

Hispanic Crusaders outperformed their comparison group counterparts by 5.7 percentage points among females (significant at .01 level) and 4.6 percentage points among males (significant at .05 level).

White female Crusaders outperformed their peers in the comparison group by 12 percentage points (85% versus 73%) and the difference is statistically significant at .05 level. Among White males, the on-time 12th grade attainment rate of Crusaders (70.6%) was higher than that of their peers in the comparison group (59.4%), but the difference of 11.2 percentage points is not statistically significant.

On-Time High School Graduation

After reaching the 12th grade, the next goal for Crusaders is to successfully complete the course of study in the 12th grade and fulfill the requirements to graduate with a high school diploma at the end of their 12th grade. Graduating high school is an important milestone on the pathway to college. A total of 1,694 Crusaders (out of 2,159 from the six cohorts) reached this milestone, yielding on-time high school graduation of nearly 79 percent for all six Crusader cohorts. Students in the matched comparison group had a much lower share of on-time high school graduates, following their lower rate of on-time grade attainment and higher attrition rate. Among students in the comparison group, seven out of ten had graduated high school on time (1,512 out of 2,159). The difference (in favor of Crusaders) of 8.5 percentage points in the rate of on-time high school graduation is statistically significant at .01 level.

The on-time high school graduation advantage of Crusaders over the comparison group varied by race/ethnicity but not by gender. The on-time high school graduation advantage of female Crusaders over female students in the matched comparison group stood at 8.3 percentage points; the difference is significant at .01 level. Male Crusaders had about the same advantage (8.5 percentage points) in the share of on-time high school graduates over their counterparts in the comparison group (81.4% versus 72.9%); the difference is statistically significant at .01 level.

The share of Black students who had graduated high school on time was 78.8 percent among Crusaders and 67.7 percent among students in the comparison group; representing a difference of 11.1 percentage points in favor of Crusaders (statistically significant at .01 level). The share of on-time high school graduates among Hispanic students was 78.4 percent among Crusaders and 71.9 percent among their peers in the comparison group; the difference of 6.5 percentage points in favor of Crusaders that is statistically significant at .01 level. Although the share of on-time high school graduates among White Crusaders (72.3%) was lower than their Black and Hispanic counterparts, it was considerably higher compared to White students in the comparison group (58%), yielding a difference of 14.6 percentage points that is statistically significant at .01 level.

Table 3: Shares of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined), who had Graduated High School on Time, by Gender and Race-Ethnicity

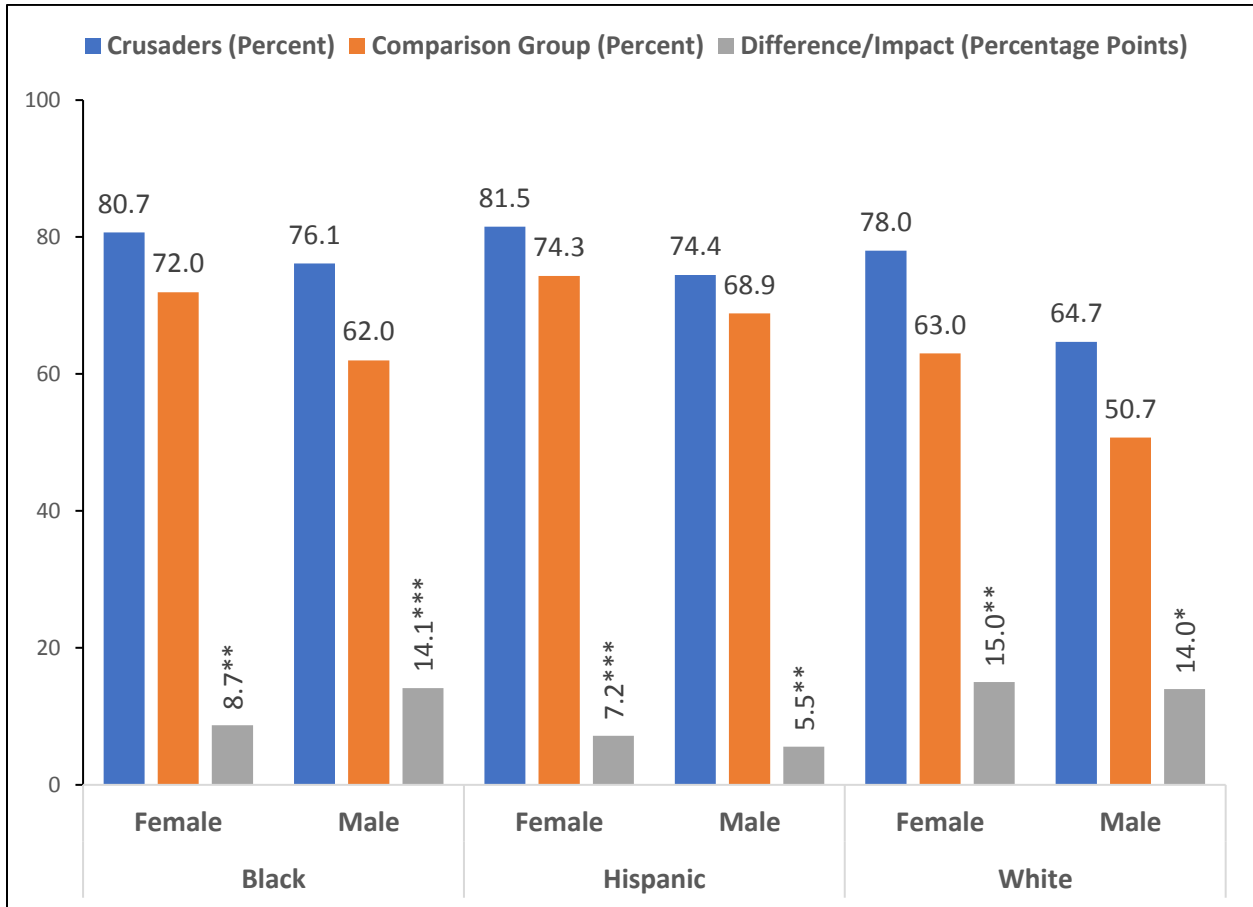
Gender and Race-Ethnicity	Crusader	Matched Comparison Group	Difference (Crusader Minus Comparison Group)
All	78.5	70.0	8.5***
Gender			
Male	74.7	66.4	8.3***
Female	81.4	72.9	8.5***
Race-Ethnicity			
Black, Non-Hispanic	78.8	67.7	11.1***
Hispanic	78.4	71.9	6.5***
White, non-Hispanic	72.6	58.0	14.6***

***p <.01, **p<.05, *p<.10

On-time high school graduation was higher among female students than their male counterparts in each of the three race-ethnicity groups among Crusaders as well as the comparison group (Chart 4). Data in Chart 4 also reveal positive impacts of participating in the College Crusade GEAR UP program on the likelihood of completing high school on time among Crusaders in each of the six gender/race-ethnicity groups. The Crusader advantage on high school completion among female Crusaders was 8.7 percentage points among Black females (80.7% versus 72.0%); statistically significant at .05 level, 7.2 percentage points among Hispanic females (81.5% versus 74.3%); statistically significant at .01 level, and 15 percentage points among White females (78% versus 63%); statistically significant at .05 level.

Male Crusaders also outperformed the comparison group on completing high school on time. More than three-quarters (76.1%) of Black male Crusaders had graduated high school on time; 14.1 percentage points higher than the share of on-time high school graduates among their comparison group counterparts (62%); the difference is statistically significant at .01 level). Among Hispanic males, nearly three-quarters of Crusaders (74.4%) had completed high school on time compared to 68.9 percent of their comparison group peers. The difference of 5.5 percentage points is statistically significant at .05 level. The rate of on-time high school completion among White males was lower than among Hispanic and Black males. Almost 65 percent of White male Crusaders from the six cohorts had completed high school on time; 14 percentage points higher than share of on-time high school graduates among White male students in the comparison group (50.7%). The difference is only marginally statistically significant at .10 level.

Chart 4: Shares of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined), who had Graduated High School on Time, by Gender/Race-Ethnicity



***p < .01, **p < .05, *p < .10

Immediate College Enrollment

Immediate college enrollment is defined as enrollment in college immediately after graduating high school. The immediate college enrollment status of students (in the summer and fall following high school graduation) can be measured in the following two ways. The first measure represents what is commonly known as the college enrollment rate, defined as the percent of high school graduates who are enrolled in college at a point in time. This measure of college enrollment is computed as: the number of on-time (Crusader or comparison group) high school graduates (from a cohort) who were immediately enrolled in college (enrolled in the summer or fall semesters after graduating high school) ÷ total number of on-time high school graduates in the cohort.

The second measure of college enrollment is a summary outcome measure of college enrollment among the entire cohort of entering sixth graders. This is a comprehensive measure that represents progress along the entire pathway from sixth grade to immediate college

enrollment including on-time (or delayed) grade attainment (persistence or attrition in middle and high school), on-time high school graduation, and immediate college enrollment. Along the path from sixth grade to college, there are a few ways in which students can falter: students could be retained (held back) in one or more grades, delaying their progress towards entering 12th grade on time; or students could exit the Rhode Island public school system or simply drop out before graduating; or they could fail to graduate high school on-time, or they could fail to immediately enroll in college. The outcome of immediate college enrollment is a culmination of positive outcomes along the path from sixth grade to college. The summary measure of college enrollment represents an outcome that measures the accumulation of outcomes along the pathway from sixth grade to college. It is measured as: the number of sixth graders from each cohort who were immediately enrolled in college ÷ total number of sixth graders in the cohort.

The discussion below presents findings on the impact of participating in the College Crusade GEAR UP program on immediate college enrollment that uses the second measure of college enrollment. We have used the second measure of immediate college enrollment for two reasons. First, this measure includes the entire 6th grade cohort as the base whereas the other measure includes only on-time high school graduates as the base. The substantially larger base at the 6th grade leads to improved statistical power of impact estimates for six gender/race-ethnicity subgroups of Crusaders. Second, this measure is a more comprehensive measure of the fundamental outcome of the GEAR UP program; college enrollment. The GEAR UP program was organized and financed by Congress with the intent of increasing college enrollment of disadvantaged youth by bolstering their ability to succeed as they worked their way through the middle and high school educational pipeline to the objective of college enrollment. The second measure of immediate college enrollment used in this research brief captures successes along the entire educational pipeline from sixth grade to college.

Nearly 61 percent of Crusaders from the six cohorts had enrolled in college immediately after graduating high school compared to only 47.7 percent of their comparison group counterparts (Table 4). The Crusader advantage of 12.9 percentage points is statistically significant at .01 level and indicates that Crusaders were about 27 percent more likely to enroll in college right after high school than their counterparts in the comparison group.

The college enrollment advantage of Crusaders over their matched comparison group participants was sizeable among men and women as well as each of the three race-ethnicity groups; and the Crusader advantage for each gender and race-ethnicity group is statistically significant at .01 level. The share of Crusaders immediately enrolled in college was higher than their comparison group counterparts by 12.5 percentage points among males, 13.1 percentage points among females, 14.9 percentage points among Black students, 11.4 percentage points among Hispanic students, and 16.3 percentage points among White students (Table 4).

A comparison of immediate college enrollment by gender and race-ethnicity groups among Crusaders finds higher shares of college enrolled students among females (66.3%) than males (53.3%); and higher rates among Black Crusaders (64.5%) than Hispanic Crusaders (59.2%) and White Crusaders (53.6%). Similarly, among students in the matched comparison groups (of the six Crusader cohorts) females performed better than males on this summary outcome measure (53.2% versus 40.8%); and Black student performed slightly better than Hispanic students (49.7% versus 47.8%) and considerably better than White students (49.7% vs. 37.3%) (Table 4).

Table 4: Share of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined) Who Enrolled in College Immediately after Graduating High School, by Gender and Race-Ethnicity

Gender and Race-Ethnicity	Crusader	Matched Comparison Group	Difference (Crusader Minus Comparison Group)
All	60.6	47.7	12.9***
Gender			
Male	53.3	40.8	12.5***
Female	66.3	53.2	13.1***
Race-Ethnicity			
Black, Non-Hispanic	64.5	49.7	14.9***
Hispanic	59.2	47.8	11.4***
White, non-Hispanic	53.6	37.3	16.3***

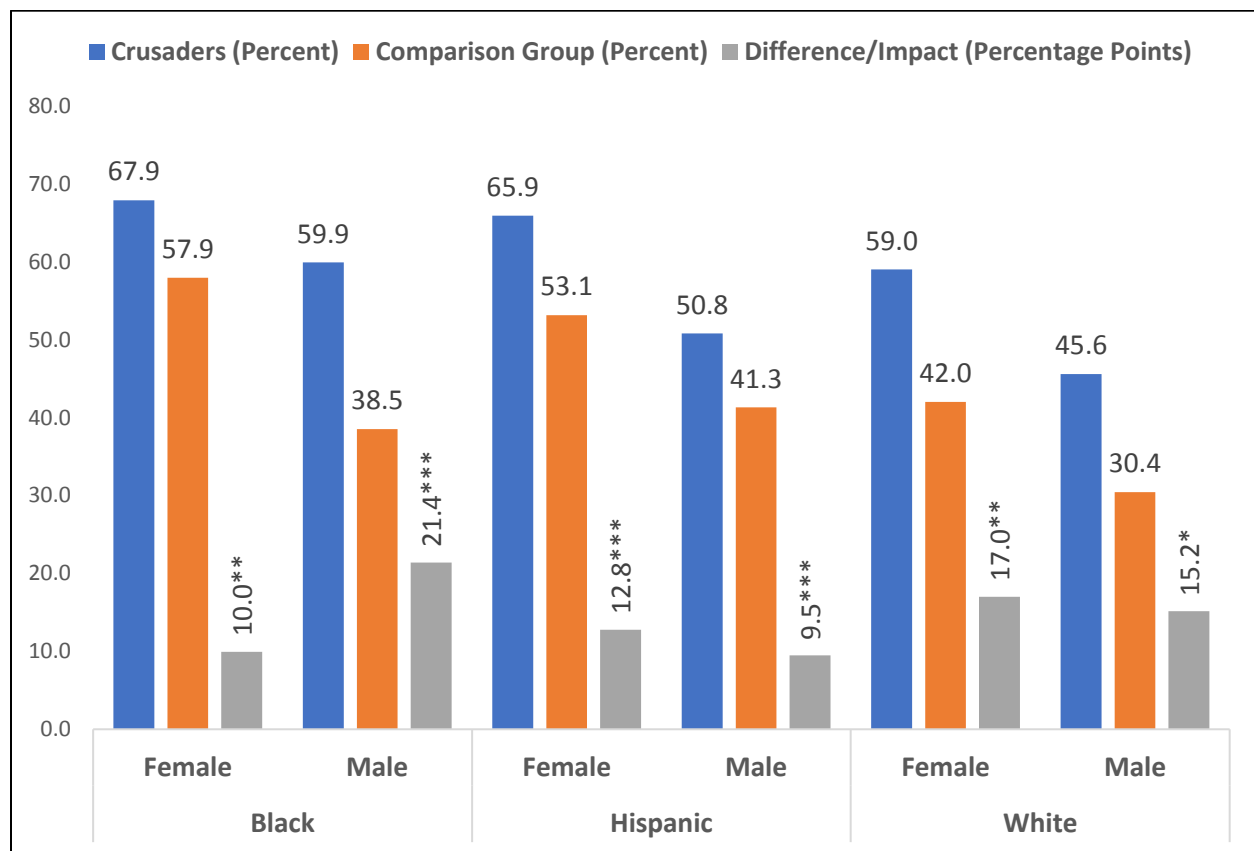
*** p <.01, ** p<.05, * p<.10

Estimates of impact of the College Crusade GEAR UP program on this cumulative outcome measure of immediate college enrollment among the six gender/race-ethnicity groups of Crusaders are presented in Chart 5. These results reveal a very large and positive impact on immediate college enrollment among Black male Crusaders. Compared to their peers in the comparison group, Black male Crusaders from these six cohorts were 21.4 percentage points more likely to immediately enroll in college (59.9% versus 38.5%); the difference is statistically significant at .01 level. Black female Crusaders were 10 percentage points more likely to immediately enroll in college than their counterparts in the comparison group (67.9% versus 57.9%); statistically significant at .05 level.

The cumulative impact on immediate college enrollment was also sizeable among Hispanic Crusaders; 12.8 percentage points among Hispanic females and 9.5 percentage points among Hispanic males. Both estimates are statistically significant at .01 level. Nearly two-thirds

(65.9%) of female Hispanic Crusaders from the six combined cohorts were immediately enrolled in college compared to 53.1 percent of their comparison group counterparts. Among Hispanic males, the share who had immediately enrolled in college was 50.8 percent among Crusaders and only 41.3 percent among their comparison group peers. White female Crusaders were 17 percentage points more likely to immediately enroll in college than White females in the comparison group; statistically significant at .05 level. Among White males, Crusaders outperformed their comparison group counterparts by 15.2 percentage points. The difference, however, is only marginally statistically significant at .10 level (Chart 5).

Chart 5: Share of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined) Who Enrolled in College Immediately after Graduating High School, by Gender/Race-Ethnicity



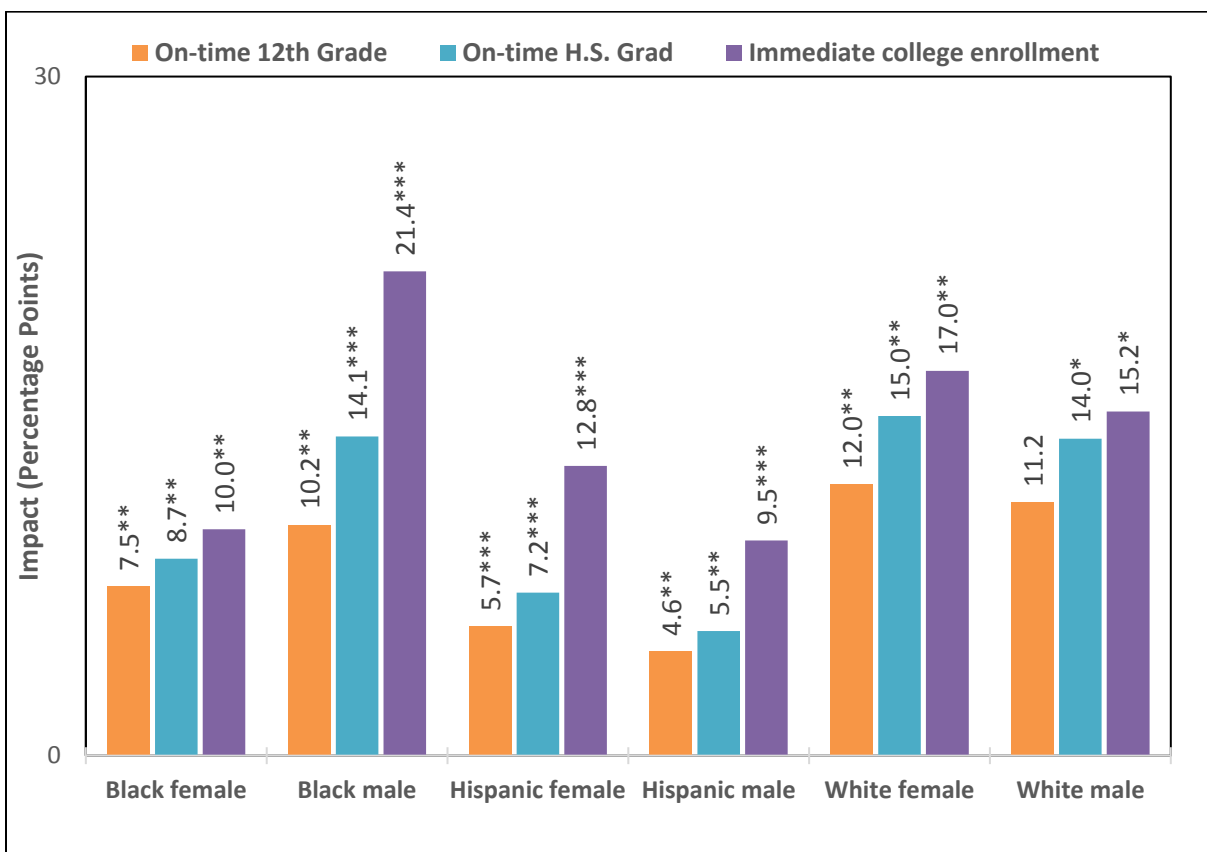
*** p < .01, ** p < .05, * p < .10

Key Findings

On each of the three outcome measures, participation in the College Crusade GEAR UP program has had sizeable positive and statistically significant impacts for five out of the six

gender/race-ethnicity groups (Chart 6).³ Among Black and Hispanic Crusaders, male as well as females outperformed their comparison group counterparts on each of the three outcome measures. Among White Crusaders, the percent of male and female Crusaders with on-time 12th grade attainment, on-time high school graduation, and immediate enrollment was higher than their matched comparison group counterparts and the Crusader advantage for White female Crusaders on each of the three outcome measures is statistically significant at .05 level. However, for White male Crusaders, the Crusader advantage is statistically significant (at .10 level) for two out of the three outcome measures.

Chart 6: Impact Estimates/Difference between Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined) for Each Outcome Measure, by Gender/Race-Ethnicity



*** p <.01, ** p<.05, * p<.10

The outcome of immediate college enrollment presented in this research brief is a cumulative outcome measure that includes the entire pathway from sixth grade to college. It includes progress with on-time grade attainment in each grade from 6th grade to 12th grade, resulting in on-time 12th grade attainment, to graduating high school on time, and enrolling in

³ Impact estimates for White males are measured with lower levels of statistical precision.

college during the summer or fall semesters after expected high school graduation. Table 5 presents this cumulative outcome measure for each of the six gender/race-ethnicity groups as well as the absolute difference in this outcome measure between Crusaders and comparison group students (which measures the size of the Crusader advantage or the impact of program participation), and the relative difference (which measures the relative (to the comparison group) increase in the likelihood of Crusaders immediately enrolling in college).

Table 5: Cumulative Outcome Measure of Immediate College Enrollment: Share of Crusaders and Comparison Group Students (2007-08 to 2012-13 Cohorts Combined) Who Enrolled in College Immediately after Graduating High School, by Gender/Race-Ethnicity

Race-Ethnicity/Gender	(A) <u>Crusaders</u> (Percent Enrolled in College Immediately)	(B) <u>Matched Comparison Group</u> Percent Enrolled in College Immediately	(C) <u>Impact: Absolute Difference</u> (Percentage Points) (A - B)	(D) <u>Relative Difference</u> (C / B)
Black male	59.9	38.5	21.4***	55.6%
White female	59.0	42.0	17.0**	40.5%
Hispanic female	65.9	53.1	12.8***	24.1%
Black female	67.9	57.9	10.0**	17.3%
Hispanic male	50.8	41.3	9.5***	23.0%
White male	45.6	30.4	15.2*	50.0%

*** p <.01, ** p<.05, * p<.10

Impact estimates on the cumulative outcome measure of immediate college enrollment reveal that Black male Crusaders saw the largest impact of the program; 21.4 percentage points, which is 55.6 percent higher than the immediate college enrollment of Black male students in the comparison group. White female Crusaders saw the second highest impact of 17 percentage points or 40.5 percent in relative terms. The impact estimate was also sizeable among Hispanic females; third highest at 12.8 percentage points or 24.1 percent higher than the immediate college enrollment of their comparison group counterparts. Black females ranked fourth highest with an impact estimate of 10 percentage points or 17.3 percent in relative terms, followed by Hispanic males with a program participation impact of 9.5 percentage points. Among White males Crusaders outperformed their comparison group counterparts by 15.2 percentage points but this difference was measured with a lower level of statistical significance (.10 level).