FAULT LINES IN POSTSECONDARY EDUCATIONAL OPPORTUNITY: A MIXED-METHODS EXAMINATION OF AT-RISK STUDENTS*

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Abstract

The purpose of the study is to improve our understanding of the conditions and characteristics that enable at-risk high school students to overcome adversity in pursuit of postsecondary education. Drawing upon data from a national scholarship program in combination with the Education Longitudinal Study of 2002 (ELS:2002), a mixed-methods approach was used to identify major fault lines in postsecondary opportunity in the United States and to examine resilience as a mechanism by which disadvantaged, at-risk students stay on track towards postsecondary education.

FAULT LINES IN POSTSECONDARY EDUCATIONAL OPPORTUNITY: A MIXED-METHODS EXAMINATION OF AT-RISK STUDENTS

Among the most complex and pervasive challenges we face as a society is achieving equality of educational opportunity, and our education system is at once the problem, by propagating disadvantages through disparate access to opportunities, and the solution, by delivering programs and services that aim to eradicate disadvantages. The past half-century has witnessed steady growth in educational aspirations, postsecondary participation rates, and the variety of educational options available to U.S. college students (Bozick and Lauff 2007; Hearn, 2001). Despite these trends, pervasive disparities remain linked to students' socioeconomic backgrounds and educational conditions (Bozick and Lauff 2007). Rates of college enrollment and postsecondary success lag among individuals from disadvantaged backgrounds and research has demonstrated that increased higher education participation and attainment have not lessened inequalities at the societal level (Corcoran, 1995).

At the center of equality of educational opportunity is the notion that our nation's higher education system should be accessible to any student who possesses the ability and motivation to enter college, regardless of the student's background (Havemann & Smeeding, 2006), yet substantial evidence shows low-income and underrepresented minority students have greater difficulty navigating the college application and admissions process, and are constrained by the complexities of the financial aid system (Kane 1999; Perna 2006). While higher-income parents draw on numerous resources to ensure that their children are adequately prepared and positioned to gain access to the best colleges and universities, students from poor families and minority neighborhoods lack the same resources (e.g., Havemann & Smeeding, 2006; McDonough, 1997; Perna & Titus, 2005). The disadvantages students face while growing up in low-income

households are compounded when hardships are encountered in the home, such as when a parent experiences unemployment, when a family member battles addiction, or when confronted with an abusive relationship or other forms of trauma (Banyard & Cantor, 2004). For students who face the most severe hardships during high school, performing well academically and aspiring to attend college may not be enough to overcome the barriers presented by their family or social circumstances. For these students in particular, the kinds of social and economic rewards that accompany a college education are distributed not according to their academic ability, performance, or aspirations, but according to their lack of wealth, social position, and difficult home lives. For these students, equality of educational opportunity does not exist.

Despite considerable attention among researchers and policymakers on improving pathways to college for students from all backgrounds (e.g., Perna, 2006; Obama, 2009; U.S. Department of Education, 2010), there exists relatively little research on the interactions between opportunity structures and the personal characteristics of at-risk students. Among students confronted with extreme challenges during high school, college can be an unattainable goal without the help of outside intervention, and success may ultimately depend on a confluence of external aid and personal attributes such as resilience. Studies of at-risk students suggest that resilience is an important mechanism for overcoming adversity and achieving greater educational outcomes, though this notion has rarely been examined among college-going student populations (Banyard & Cantor, 2004; Wang & Gordon, 1994). The present study seeks to fill this gap by studying a group of at-risk students who have experienced adversity, situating them in the national context of high school students and early college enrollees, and adding to the broader dialogue on improving equality of educational opportunity.

The purpose of the study is to identify and understand the conditions and characteristics that have enabled at-risk high school students to overcome adversity in pursuit of postsecondary education. Drawing on nationally representative data from the Education Longitudinal Study of 2002 (ELS:2002), in combination with application records from the Horatio Alger Association (HAA) Scholarship Program, we have employed a mixed-methods analytic approach to identify areas of disadvantage, as well as to describe why certain students were able to succeed academically despite disadvantages. Our results highlight major fault lines in postsecondary educational opportunity and provide new information for researchers, policy-makers, and practitioners interested in improving college access for at-risk students and fostering resilience among college aspirants.

The Horatio Alger Association Scholarship Program

The Horatio Alger Association of Distinguished Americans (HAA) Scholarship Program is one of the longest running and largest need-based college aid programs in the U.S. Since 1984, the HAA has awarded nearly $90,000,000 in scholarships to over 16,000 high school graduates and members of the armed forces, supporting them in the pursuit of a college education. On average, the HAA Scholarship Program receives over 30,000 applications per year, approximately 8,000 of which are fully completed and reviewed. From this applicant pool, more than 100 National Scholarships and approximately 800 State Scholarships are awarded annually to students from all 50 states, Puerto Rico and the District of Columbia (HAA, 2012). In recent years, through the Dennis R. Washington Achievement Scholarship, the HAA Scholarship Program has expanded its focus to later points in the educational pipeline by providing grants to college students who seek a graduate degree.

The direct monetary award ranges from $20,000 among National Scholars, to roughly $5,000 among State Scholars, distributed throughout the Scholars' college years. Scholars receive additional support in the form of laptops, internship opportunities, and other financial matching gifts provided through college and university partnerships. In order to stay in the program and continue receiving support services and monetary awards, Scholars are required to maintain a grade point average of at least 3.0. For Scholars who continue to face the kinds of adversity they experienced prior to college, the HAA program provides additional support through access to a crisis hotline. Altogether, the HAA Scholarship Program is an individualized, multifaceted, and comprehensive effort to support its scholarship recipients (for more information on the HAA Scholarship Program, see https://www.horatioalger.org/scholarships/index.cfm).

What distinguishes the HAA Scholarship Program from other need-based programs is the specific focus on students who have experienced adversity and hardship in their lives, while demonstrating academic potential and active involvement in their schools and communities (HAA, 2011). A defining quality among the population of HAA Scholars is the level of adversity they have experienced prior to applying to the HAA Scholarship Program, in combination with having maintained aspirations for a postsecondary education. Scholarship awards are determined based on a panel review process that takes in to account applicants' levels financial need, high school grades and involvement in co-curricular and community activities. At the center of the selection process is a weighting algorithm that ranks applicants according to critical financial need, adversity, work history, and academic achievement, while assigning less weight to community service and extracurricular school involvement.

Figure 1 presents an overview of the kinds of adversities experienced among applicants and awarded Scholars for the 2009 and 2010 application years and demonstrates the severity of

these students' conditions. Despite their circumstances, research has shown that HAA Scholars persist through post-secondary education and earn bachelor's degrees at rates that exceed national averages: Approximately 74 percent of National and 60 percent of State Scholars graduate from 4-year institutions, versus roughly 56 percent of the overall national sample and 23 percent of low-income national sample (ACT, 2010; Aud & Haynes, 2010; HAA, 2009, 2012).

| Insert Figure 1 |

The Study

Conducted in 2011 by NORC at the University of Chicago, the study represents one part of a comprehensive research effort designed to identify areas of disadvantage and to describe why certain students are able to succeed academically despite their risk factors. Building on the unique qualities of the HAA Scholars and the richness of the application data maintained by the HAA Program, we have examined the conditions and characteristics that have enabled a population of at-risk high school students to overcome adversity in pursuit of postsecondary education. The larger project further aims to improve our understanding of how success unfolds over the life course at multiple points in time, from the senior year of high school to the years following college graduation, and to contribute new empirical evidence on the mechanisms that increase educational attainment among at-risk students.

Conceptual Framework

The conceptual framework for the study is interdisciplinary, located at the intersection of two distinct research areas. One research area highlights the notion that access to postsecondary opportunities is shaped by combinations of individual and organizational resources. Our conceptualization is largely influenced by perspectives related to human capital formation, status attainment, and social and cultural resources, and an understanding that individual's behavior is

partly determined by the context in which the behavior is situated (Bourdieu, 1986; Hossler, Braxton, & Coopersmith, 1989; Lin, 2001; Paulsen, 1990; Perna, 2006).

Studies of high school seniors and entering college students have shown the importance of student and family characteristics, as well as measures of the high school context in shaping the opportunities, and perceptions of opportunities, related to college enrollment (e.g., Engberg & Wolniak, 2010; Paulsen & St. John, 2002; Perna, 2006, Perna & Titus, 2005), and policy reports have focused on risk factors and support structures for students preparing for and transitioning into college (e.g., Domina, 2009; Horn, Chen, & Adelman, 1998; IHEP, 2011; Kaufman & Bradbury, 1992). Evidence indicates several factors related to socioeconomic position, family structure, academic achievement, and school contexts determine postsecondary educational opportunity, particularly for students from the most disadvantaged backgrounds (e.g., Baker & Siryk, 1984; Banyard & Cantor, 2004; Grodsky & Jackson, 2009; Horn, 1997; Wolniak & Engberg, 2011).

The second research area is a branch of the field of "positive psychology" (Seligman & Csikszentmihalyi, 2000). This work stresses that combinations of individual and institutional traits are essential for examining the impact of adversity among school-age populations, and that resilience enables students to positively adapt to difficult circumstances (Seligman & Csikszentmihalyi, 2000; Luthar, Cicchettia, & Becker, 2000). Evidence has shown that academic success, as well as the ability to maintain relationships with other students and adults, are indicators of positive adaptation (Luther, et al., 2000; Masten, et al., 1995), and that school resources, intellectual skills, socioeconomic advantage, and self-efficacy are positively correlated with resilience (Masten, 1994). Studies have confirmed the positive influence of several protective factors (Katz, 1997) that have been identified in the resiliency literature (Engle, Bermeo, & O'Brien, 2006; Shultz, & Mueller, 2006; Voelkl, 1997; Werner, 2000; Wigfield, &

Eccles, 2002). Such factors includ ongoing strong relationships with parent figures, a sense of belonging at school and the surrounding environment, high expectations for academic success and a strong sense of self-esteem or self-efficacy paired with a corresponding motivational drive.

Research Questions

These two conceptual domains together suggest that combinations of individual attributes, support structures, and educational experiences increase the ability of individuals to overcome adversity and to achieve educational and life success. Building on past research, we have designed this study to answer the following research questions.

Question 1: What are the socioeconomic characteristics, academic achievement and involvement during high school, and the high school conditions surrounding at-risk students, and how do these compare to the general population of U.S. high school students and early college enrollees?

Question 2: What personal attributes and motivational characteristics have enabled at-risk students to overcome adversity and achieve academic success?

By addressing Question 1 we examine major fault lines in educational opportunity within the national context of high school seniors to identify the postsecondary opportunity structures faced by at-risk students. Question 2 examines the extent and depth of students' experiences with adversity and the factors that have facilitated or motivated them to overcome adversity.

Methods

Data

Data for the study consisted of application records from the 2009 and 2010 HAA Scholarship program, and nationally representative data from ELS:2002.

2009–2010 Applicant Records from the HAA Scholarship Program. HAA Application Data contain information on applicants' demographics, socioeconomics, academic preparation and achievement, in- and out-of-school engagement, and experiences with adversity. The combined two-year 2009–2010 HAA Applicant file contains roughly 17,000 students, 10 percent (1,690) of whom were awarded a HAA scholarship. The HAA Applicant file includes a range of measures related to applicants' demographic and socioeconomic characteristics, education, engagement, and work experiences, the degree and type of adversity experienced, and scholarship award status. Contained within the HAA applicant file is information on 4,690 high schools, which we matched to school-level indicators from the Common Core of Data (CCD) and Private School Survey (PSS) using a CEEB-NCES ID crosswalk developed for this study. In addition to these variables, the applicant data included information from open-ended personal narratives pertaining to exposure to adversity, aspirations, and expressions of resilience.

Education Longitudinal Study of 2002 (ELS:2002). ELS:2002 is a survey research project funded by U.S. Department of Education designed to explore students' transitions from secondary school into postsecondary education and the workforce. The analytic sample for this study is based on the 2002 panel of students who were seniors in high school in 2004 and followed up in 2006 representing more than 16,100 students. Applying longitudinal panel weights (*F2BYWT*) resulted in a weighted sample of approximately 3.3 million students generalizable to the 2002 U.S. population of high school sophomores as they advance through high school and into postsecondary education and/or the world of work. The ELS data is well suited for examining postsecondary outcomes among students from a broad range of backgrounds. These data are the most up-to-date nationally representative database available on U.S. high school students and early college enrollees, containing critical information for understanding postsecondary opportunity

structures, and provide a rich source of information for situating the HAA Applicants and Scholars within the national context.

Variables

The HAA Application data in combination with ELS:2002 data form a unique and rich dataset with depth and breadth to contribute new information on an understudied group of at-risk students. An important first step in preparing the data for analysis was to identify and condition a common set of variables in both the HAA Application and ELS data to support comparisons among high school seniors with similarly disadvantaged backgrounds. This preliminary step provided the following sets of variables common to both datasets and coded according to the variable distributions within the HAA Application data to achieve comparability between the datasets:

Ascribed background and socioeconomic characteristics: Family Income (Adjusted Gross Income = $15,000 or less, $15,001 - $25000, $25001 - $35000; Greater than $35000), Number of Dependents in Family Household (0 – 2, 3 – 4, 5 or more), Disabled (Yes, No), and Parental Unemployment (Yes, No);

Academic achievement and involvement: ACT or Converted SAT Score (20 or lower, 21 – 28, 29 or higher), Engagement in School Activities (Yes, No), Community Service (Yes, No), Employment During High School (Yes, No);

Educational conditions of the high school: Structural diversity (Percent minority students = 33% or less, 34 – 66%, 67% or more); Student-to-Teacher Ratios (15 or less, 16 – 25, 26 or more); Socioeconomic Status (Percent of Students Receiving Free or Reduced-price Lunch), Urbanicity (Urban, Suburban, Town, and Rural);

Postsecondary outcomes: Three postsecondary enrollment outcomes were examined within the ELS:2002 data. (1) Enrollment in a two-year, four-year, or no postsecondary institution based on variable *F2PS1LVL* (*Level of offering of first postsecondary institution*); (2) Selectivity of institution attended among two- and four-year college enrollees, based on the variable *F2PS1SLC* (*Institutional selectivity of first postsecondary institution*) and coded as Selective, Moderately Selective, and Inclusive; and (3) Part-time or Full-time enrollment among four-year college enrollees based on variable *F2PS1FTP* (*Enrollment intensity at first postsecondary institution*).

Table 1 below presents the descriptive statistics for the above variables within the 2009 and 2010 HAA Application Data. For more information on ELS data, see http://nces.ed.gov/surveys/els2002/.

| Insert Table 1 |

Analysis

We employed a mixed-methods approach involving descriptive and bivariate quantitative analyses of HAA Applicant and ELS data, as well as a qualitative analysis of open-ended responses contained in the HAA Application Data. To answer our first research question, we examined ELS data to determine how rates of postsecondary enrollment (at two-year and four-year institutions, enrollment at selective institutions, and full- and part-time enrollment) vary by students' family and socioeconomic backgrounds, academic achievement, community involvement, employment, and the conditions of the high schools attended. This information enabled us to identify the fault lines in postsecondary educational opportunity and to situate the backgrounds of HAA Applicants in terms of broad trends in postsecondary outcomes. The next set of analysis used descriptive techniques to examine the population means among HAA applicants

(in total and among Scholarship recipients) and in relation to the national population of high school seniors in terms of the same set of measures listed above.

For all quantitative analyses, cross tabulations were used to examine mean differences. Tests for statistical significance were based on a Welch's *t*-test for independent samples with unequal variance when examining differences between ELS and HAA Application data, while a Students' *t*-test was used when examining differences within the ELS data.

To answer our second research question, we applied qualitative techniques to understand the extent to which resilience served as a mechanism for overcoming adversity and ultimately achieving educational success. Through a content analysis of applicants' personal narratives, we focused on the extent and depth of applicants' experiences with adversity and the factors that facilitated or motivated applicants to face and potentially overcome their adversities. Specifically, we analyzed applicants' open-ended responses to two essay questions: (1) *Please describe in detail the adversities you indicated [in the preceding application questions] and explain how the adversities that you have experienced in your life have motivated you to pursue and complete a college degree,* and (2) *Explain your career goal(s) and the importance of a college education in attaining those goals.*

Inherent in these questions is an assumption that individuals' adversities constitute a motivating force, one that the individual has felt after gaining perspective on his or her adverse experiences. Resilient individuals frequently cite their experiences with adversity as factors that motivate their success (Luthar, Cicchettia, & Becker, 2000; Masten, 1994; Masten, Coatswork, et al., 1995). However, we analyzed the essay questions more broadly, looking for any factors that may have contributed to the individual's ability to face and potentially overcome the adversities that he or she has experienced. Such factors may or may not be directly tied to their experiences

with adversity. For example, a parent's experiences with drug addiction may have motivated an applicant to avoid drugs and study hard, but this applicant may also have benefited from the presence of a caring adult, who facilitated the applicant's good decision-making when the parent was unavailable. Thus, all references to "facilitating" or "motivating" factors were flagged and coded.

Applying a "grounded theory" approach to the qualitative data (Glaser & Strauss, 1967), the number and type of codes were not determined prior to analysis; rather, the coding scheme was developed inductively by two researchers using an initial sample of 25 applicant essays. Once a basic coding scheme had been developed, the main analysis of Applicants' experiences with adversity and their facility/motivation for overcoming adversity was conducted on a sample of 120 applications randomly drawn from the full population of 2009–2010 HAA Applicants. Each of the two coders analyzed the essays of 80 applicants, 40 of which were analyzed by both coders to establish inter-coder reliability (Bernard & Ryan, 2010; Neuendorf, 2002). The full sample included a subsample of 60 Scholars and a subsample of 60 Non-recipients. The sample was drawn to proportionally mirror the full population of 2009–2010 HAA Applicants in terms of gender composition, family income, award status (National, State, and Non-recipients), and number of adversities experienced. Thus, findings from the qualitative analysis may be generalized to all 2009–2010 HAA Applicants. The qualitative methods were carried out in five main steps, as illustrated in Figure 2.

| Insert Figure 2 |

Limitations

This study has at least two noteworthy limitations. First, unlike the general population of U.S. high school and early college students, HAA Scholars share two unique features: all have

experienced adverse situations in their lives and all are educationally motivated to the point of applying to the HAA Scholarship Program. The application data offer researchers an opportunity to examine how individual attributes, support structures and educational experiences increase the ability of individuals to overcome adversity and to achieve educational and life success. However, the qualities of the HAA applicant pool reduce the external validity of the study's findings, and one should not generalize results from this study to the broader population of high school seniors or early college students. Second, the HAA Scholarship program intentionally does not take into consideration the racial or ethnic backgrounds of applicants when making award decisions. The resulting lack of information on race/ethnicity contained in the application data prevented us from taking into account the full set of demographic variables known to influence postsecondary outcomes (e.g., Bozick & Lauff, 2007; Engberg & Wolniak, 2009). Follow-up studies of the HAA Scholarship Program are currently underway which examine racial/ethnic differences across a range of postsecondary and career outcomes.

Results

The results are presented in three sections that together address the study's research questions. The first section examines a set of socioeconomic characteristics, academic achievement and involvement during high school, and high school conditions, in relation to postsecondary enrollment outcomes among a nationally representative sample of high school graduates and early college enrollees. The second set of results provides information on HAA Applicants and Scholarship Recipients in comparison to the general population of U.S. high school students. The third and final set of results stems from the qualitative examination of personal narratives among HAA Applicants, identifying the attributes and characteristics

associated with applicants' abilities to overcome adversity. Together the initial two sets of results address Question 1, while the final set of results addresses Question 2.

Fault Lines in U.S. Postsecondary Opportunity

Analyses of ELS data provide a context in which to view the distinct qualities of the HAA Applicants and Scholarship Recipients, and to understand how these qualities may influence postsecondary opportunities. Table 2 contains rates of two-year, four-year, and no postsecondary enrollment among high school graduates. Table 3 shows rates of enrollment in selective, moderately selective, and inclusive schools among college enrollees. Finally, Table 4 presents rates of full- and part-time enrollment among enrolled four-year college students. Statistically significant group mean differences are provided in each table.

Several consistent patterns appeared from analyzing the ELS data in terms of postsecondary enrollment, selectivity of institution attended, and enrollment intensity. Each of these postsecondary outcomes vary by family resources (income, parental unemployment, and number of dependents), disability status, academic achievement, community engagement, and high school conditions. The most pronounced differences in postsecondary outcomes occur with respect to family incomes and academic achievement, participation in community activities, and to a lesser extent, the student-to-teacher ratio within the high school attended.

In terms of family income, among four-year college enrollees, only 4.4 percent of students come from families with annual incomes below $15,000, compared to 81.2 percent of students from families with incomes greater than $35,000 (see Table 2). Furthermore, the proportion of students from the lowest income families who did not enroll in college is over four-times larger than the proportion of four-year college enrollees from the lowest income families. A similar pattern emerges from analyses of college selectivity, a measure commonly used to assess quality

of postsecondary institution. Among enrollees at the most selective schools, only 2.3 percent came from the lowest family income category, while nearly 89.2 percent of students from families earning over $35,000 per year enrolled in a selective college (see Table 3). Among four-year college enrollees, essentially the same pattern appears in terms of full-time versus part-time enrollment (see Table 4).

Looking at academic achievement as measured by ACT scores (or converted SAT scores), national data indicate that the share of students enrolled at four-year colleges who scored a 29 or higher on their ACT is roughly three times greater than the shares of comparable students who either enrolled at two-year colleges or who did not enroll in college (5.9 vs. 1.7 and 1.8 percent, respectively, see Table 2). While 61.0 percent of four-year college enrollees earned an ACT of 20 or lower, this is considerably less than the corresponding shares of low scoring two-year enrollees (70.0 percent) and non-enrollees (76.5 percent). As one would expect, the selectivity of college attended also varies widely by ACT scores, where 62.4 percent of selective college enrollees achieved between 21 and 28 on their ACT, compared to 58.2 percent among moderately selective college enrollees, and 33.5 percent among enrollees in inclusive colleges (see Table 3). More pronounced trends appear when looking at the highest ACT scorers, where 28.9 percent of selective college enrollees achieved a 29 or higher on their ACT exam compared to roughly 6.1 percent of moderately selective enrollees, and 2.9 percent of inclusive college enrollees (see Table 4). Among four-year college enrollees, the majority (nearly 55.8 percent) of full-time students earned ACT scores between 21 and 28, compared to 34.7 percent of part-time enrollees who earned such ACT scores. In addition, the share of full-time enrollees who scored a 29 or higher on their ACT was almost four-times greater than the comparable share of part-time enrollees (14 versus 4 percent).

Participation in community activities further differentiates students, where 77.0 percent of four-year college enrollees engaged in some form of community service activity during high school, which is one-and-a-half times greater than the participation of two-year college enrollees (54.7 percent), and over two-times greater than that of non-enrollees (34.9 percent, see Table 2). Similar patterns are found in terms of the selectivity of college attended (see Table 3), and part-time versus full-time enrollment among four-year college students (see Table 4). Among the high school conditions that vary by postsecondary outcomes, attending a high school with a high student-to-teacher ratio (26 or higher) is roughly twice as common among two-year college enrollees (6.9 percent) and non-enrollees (6.3 percent), than it is among four-year college enrollees (3.3 percent), and similar trends appear in terms of selectivity of college attended. Attending a high school with a high level of structural diversity (based on percent minority students) also differs by selectivity of institution attended: roughly 29.9 percent of students who enrolled in inclusive schools were from schools with over two-thirds minority students, whereas 12.2 percent of students enrolled in moderately selective schools and 6.9 percent of students enrolled in selective school attended high schools with this level of diversity. Among four-year students who were enrolled on a part-time basis, 13.6 percent were from highly diverse schools, while twice as many (27.7 percent) were enrolled on a part-time basis.

| Insert Tables 2, 3, 4 |

HAA Applicants Compared to U.S. High Schools Students and Early College Enrollees

We next examine the HAA Application data in comparison to ELS data, across the same set of socioeconomic characteristics, academic achievement and involvement measures, and high school conditions discussed above. This analysis highlights ways in which HAA Applicants are distinctive compared to their average U.S. counterparts in terms of factors associated with

postsecondary educational opportunity.

Table 5 describes characteristics of HAA Applicants (in total and among awarded Scholarship Recipients) relative to a national sample of high school seniors in 2004. Results indicate that HAA Applicants, and particularly Scholarship recipients, are far more likely to come from low-income families, and families with five or more dependents. Despite their household environments, HAA Applicants were more likely than their national counterparts to achieve high ACT or SAT scores, and to participate in community service activities, and were less likely to have been employed during the school year.

The fact that the majority of HAA Scholarship Recipients come from families earning less than $15,000 per year places these students at risk of following national trends which clearly show the disadvantages that students from low-income families confront in realizing postsecondary success. However, the large majority of HAA Scholarship recipients achieve ACT scores of 21 or higher (with National Scholars earning, on average, a score of 25). In addition, over 90 percent participate in community service activities. ACT scores and community service together improve these students' chances for attending relatively selective, four-year colleges and attending school on a full-time basis. Thus, the ACT scores and community involvement of HAA Scholars may counter the disadvantages presented by their family circumstances.

Turning to the high school conditions experienced by HAA Applicants and the national comparison population, it appears that HAA Applicants attended schools that, on average, have fewer students per teacher. This is particularly evident among the relatively large share of Scholarship recipients attending schools with 15 or fewer students per teacher (43 versus 29 percent). With respect to exposure to a diverse student body, small but significant differences are found between HAA Applicants and their national counterparts, indicating larger concentrations of

minority students at HAA Applicant schools. HAA Applicants were also more likely to attend high school in rural settings, and less likely to attend schools in urban and suburban settings than the average U.S. high school senior. These differences are more pronounced when examining Scholarship recipients versus the national comparison population. Importantly, the fact that HAA Applicants and Scholars were more often situated in rural and suburban settings may be influencing other results such as family income differences and percent minority in schools.

| Insert Table 5 |

Factors for Overcoming Adversity

The next set of results is based on a qualitative content analysis of a sample of 120 applicants' essays randomly drawn from the full population of 2009–2010 HAA Applicants. Responses yield information on the nature and severity of adversity, as well as on how applicants explain their own motivation and success. Applicants' personal narratives provide a valuable source of information on the types of adversities experienced, the extent to which adversity may have served as a motivating factor, and the ways in which applicants have reacted to adversity as evidence of their varying expressions of resilience. Through qualitative analysis of applicant essays, common themes emerged for each of these topics.

Adversity and other motivating factors. Most applicants (71 of the 120 cases in the qualitative sample; 59 percent) specified how adversity has been a motivating force in their lives. Among these 71 applicants, over half (39 cases) indicated that their adversity experiences have made them more determined to succeed. For example, one applicant wrote:

> *"I could choose to see adversities as obstacles. But I have chosen to view them as challenges and opportunities. Blind since birth, I have rarely felt sorry for myself, and instead have enthusiastically learned to adapt and excel. While not within my control, the physical abuse, my mother's two divorces, and my mother's mental illness have only hardened my determination to take things in stride, learn to cope, and grow stronger."*

A similar number of applicants (35 out of the 71 cases that cited adversity experiences as a motivating factor) provided evidence that adversity had influenced their perspectives or had made them more mature in some way. Several applicants, for example, related stories about having to take on additional responsibilities in the household with the recession and/or after a parent's loss of employment. Many others explained how adversities had forced them to be more independent, more self-sufficient academically and/or financially. Still other applicants, like the one quoted above, stressed that their adversity experiences had enabled them to see positive aspects amidst negative circumstances.

Over one-third of the 71 applicants who cited the motivating influence of adversity (26 cases) indicated that adversities had shaped their value systems in some way. For example, many applicants explained that adversities had impressed upon them the importance of helping others who face social or economic challenges. Other applicants found fault in the value systems of their families and were determined not to repeat their parents' mistakes. One applicant who typifies this perspective stated:

> *"My past experiences have made me truly contemplate what I want in life. Although I love my parents, I honestly do not want the lives that they chose. My father dropped out of high school, my mother dropped out of college, and for as long as I can remember both have gone from one job to the next. I do not want to be like my parents... I do not want a life of running away when adversity comes my direction."*

While experiences with adversity appear to be a prime motivator for HAA Applicants, many of the essays reference other attributes and characteristics that may have encouraged applicants to aspire to a college education or successful career. Results indicate four other key sources of motivation: (1) A desire to give back to their communities or to

help others in some way (64 of the 120 cases in the sample, or 53 percent); (2) A desire for financial security (31 percent); (3) The positive influence of family members or other persons in their social network (28 percent); and (4) A personal interest or passion (28 percent).

These findings suggest that individuals' ability to overcome adversity is influenced by a mixture of external factors (e.g., the encouragement of a parent or teacher) and internal attributes or dispositions (e.g., a community service orientation). Further, many of these factors appear to be a function of (or to interact with) applicants' adversity experiences. For example, an individual's experience with financial hardships may inculcate a desire for financial security in adulthood and/or a desire to help others with similar difficulties. To better understand the relationships between these factors, we examined the ways applicants routinely express resilience.

Reactions to adversity. Judged qualitatively, some applicants' narratives paint a picture of having suffered multiple adverse experiences and/or particularly severe adversities (e.g., physical and psychological abuse – often by a parent with substance abuse problems – parental abandonment, severe poverty or homelessness; a need to serve as a caregiver to a parent, sibling, or child; etc.). For other applicants, the picture is less grim: for instance, the short-term parental unemployment, relatively minor troubles within the home or at school, lack of information about college, etc. For the purposes of our analysis, we grouped applicants into low, moderate, and high levels of adversity. Applicants who experienced medium or high levels of adversity and simultaneously demonstrated moderate to high levels of motivation or success in their essays were then deemed "resilient."

In total, 76 of the 120 cases analyzed (63 percent) were classified as resilient by displaying moderate to high levels of both adversity and motivation/success. One of our main goals in

identifying this group was to determine the key characteristics of resilient applicants: applicants who defy expectations and succeed despite facing difficult circumstances.

Overall, results suggests that resilience is expressed among HAA Applicants as three interrelated types: (1) those who take action to minimize present adversity in tangible ways, (2) those who focus on career and academic goals with the hope that adversity will be lessened in the future, and (3) those who mentally reframe past and present adversities in order to see the positive in them and/or transcend them. Each of these three types is summarized below.

1. Resilient students take it upon themselves to reduce their adverse experiences. As noted above, the most commonly cited form of adversity was financial problems. Type 1 applicants dealing with financial hardships frequently described taking on part-time work in an effort to help their families or become financially independent. They described educating themselves in financial matters and seeking out funding opportunities for the academic and extracurricular activities they wish to pursue. For example:

> *"Although always an issue, my mom tried her best not to let us worry about money, but nevertheless I made sure I got my first job when I was 13. I made a handy dishwasher. I have maintained a job status ever since. At one point I balanced three different jobs at once. To me, my way of helping out the family was to earn enough money so me being taken care of wouldn't be a worry."*

2. Resilient students focus on ensuring that their futures are free from the adversities they are experiencing. For some students, adversity motivates them to make sacrifices now that may not pay off for several years. For example, many of the applicants of this type described working increasingly hard in school to prepare for college. These applicants were able to articulate their goals in concrete terms and specify the ways that they are working towards these goals (e.g., by seeking out mentors or by gathering information on potential college or career opportunities.). For example:

"I spent the majority of my childhood bouncing between shelters and hotels. Sometimes, not knowing if we were going to have dinner. […] I used these obstacles as inspiration to work harder, stay in school and prepare to go to college to better myself so that I will never have to suffer from these hardships again. The career I intend to go into is Sports Medicine/ Athletic Training. […] In order to get the job I want to have I will need a masters or doctorates in sports medicine. It would take about 5–6 years of study and internship with different professional teams, taking a national certification test, and dedication to reading and staying involved with the teams, but I am sure this is what I want to do".

3. Resilient students are skilled at mentally reframing their adversities. Some students view the adversities they have faced as accomplishments, or as obstacles that they have overcome and from which they have gained strength. These applicants were able to describe their situation with a degree of optimism, despite the profoundly negative issues involved. For example:

"Life has presented me with many challenges in my seventeen years. I have faced being homeless, watched my mother lose her battle with cancer, struggled with the financial burdens that were the consequences of my mother's illness, and learned to cope with my father's alcohol addiction and emotional abuse. […] The challenges I have faced have shown me that I can survive and grow. I have become a stronger person. I can stand up and take charge of my own life. I have learned that life's about staying strong and facing each day with renewed hope and enthusiasm. And that is exactly what I plan to do."

HAA Applicants describe a wide range of adverse life experiences: from minor problems at home or school to the more severe issues of poverty, illness and disability, family instability, and psychological distress. Despite facing such challenges, these individuals appear motivated to pursue a college education. Much of this motivation originates from applicants' experiences with adversity – experiences which have made them more determined, influenced their perspective and maturity, and shaped their value systems. Other motivating factors include aspirations of helping their communities, a desire for financial security, the positive influence of mentors at home or school, and a deep interest in a particular academic subject or career field. Applicants we identified as

having moderate to high levels of resilience are distinguished by the actions they have taken to improve their present situation, their willingness to sacrifice immediate gratification to ensure future success, and their ability to mentally reframe adverse circumstances and see them as accomplishments.

Discussion

Unlike the general population of American youth, HAA Applicants share two unique features: all have experienced adverse situations in their lives and all are educationally successful enough to have applied to the HAA Scholarship Program. In this way, every HAA Applicant demonstrates a degree of resilience. By examining HAA applicant data in combination with nationally representative ELS data, we have identified areas of disadvantage and described why certain students were able to succeed academically despite disadvantages. Analyses of HAA application records yielded information on resilience as a mechanism by which students stay on track to achieve educational success. By also examining ELS data we situated at-risk students in the national context to identify major fault lines in the postsecondary opportunity in the U.S., and responded to calls to draw on "existing national databases and make creative use of them…to examine the concept of resilience" (Peng, 1994, p.74). The resulting evidence addresses two research questions. In answering Question 1 we analyzed the individual characteristics, involvements, and high school conditions among the at-risk population of HAA applications in comparison to the general population of U.S. high school students and early college enrollees. In answering Question 2 we identified the personal attributes and motivational characteristics that have enabled at-risk students to overcome adversity and achieve academic success.

Three key findings emerged from this study. First, from comparative analyses of nationally representative ELS data, major fault lines exist that define the structure of

postsecondary education opportunity in the U.S. Clear differences exist in college enrollment rates by socioeconomic status of households and by structural characteristics of the high school context. However, academic achievement and active involvement in such things as community service are countervailing trends to those associated with socioeconomic disadvantage. Our results are consistent with the differences in the two- and four-year enrollment rates by students' socioeconomic status and academic achievement during high school reported in recent studies (Bozick & Lauff, 2007; Perna, 2006; Engberg & Wolniak, 2010), and our findings resonate with those of Horn, et al. (1998) who found that student engagement is a strong predictor in models of high school completion among at-risk students. Evident in this set of findings is that students' pathways to college are shaped by interactions between opportunity structures and backgrounds characteristics, but by engaging in certain activities, students may be able to offset the disadvantages tied to their socioeconomic or family circumstances.

The second key finding is that students who are involved in their communities tend to be more likely to enroll in four-year colleges, attend more selective institutions, and maintain full-time enrollment. This finding provides an empirical basis on which to encourage students to pursue such activities, particularly students from disadvantaged backgrounds, and may guide educational programing to incorporate community service activities and encourage high school counselors to work with college aspiring students to bolster their out of school engagement. Our findings should be viewed in combination with previous research on college students showing positive associations between volunteer work and service involvement and the development of cognitive and intellectual skills (Batchelder & Root, 1994; Vogelgesang & Astin, 2000), moral reasoning (Astin & Sax, 1998), civic responsibility (Mayhew & Engberg, 2011) and career orientation (Eyler & Giles, 1999).

The finding that HAA Applicants were more likely than their national counterparts to have participated in community service activities, while being less likely to have been employed during high school, should be the basis for additional research. It may be that engagement in community service and extracurricular activities provide opportunity for students to be seen by others as a positive member of the community or a role model. It may be that community involvement offers students a means of recasting oneself as a valued member of a larger community in ways that are not afforded in a work environment.

Third, our qualitative results show that specific experiences and relationships are the means by which resilience is expressed among the study's population of at-risk students. For the most resilient students, confronting their adversity is an active and conscious process, a process that starts with the mental reframing of adversity and by viewing hardship as a stepping-stone to become better and stronger, rather than giving in and assuming a defeatist attitude. In this way, the resilient Scholars we examined appear to gain a powerful internal motivator that drives their subsequent decisions and actions. The harsh circumstances surrounding their homes and personal experiences during high school appear to be a driving force motivating them to pursue goals that can lead them to overcome their burdens in immediate term and into the future.

Building healthy and rewarding personal relationships with mentors, educators, community members and peers may help to reaffirm their belief in the value of trusting and depending on others, while being acknowledged and valued as essential actors in their respective roles and activities. At the same time, the aura of having a positive attitude towards life becomes an additional reward mechanism: resiliency traits appeal rather strongly to other people's empathy and humanitarian attributes, and the gradual emergence of resilience becomes an act of reaffirming the ecumenical belief that helping each other is the most valuable human trait. Recent work by

Bryant (2011a, 2011b) has demonstrated that factors associated with college students' encounters with religion and diversity leads to personal crisis or struggle, which ultimately results in the development of an ecumenical orientation. For HAA Scholars, while the crises experienced extend well beyond religious or spiritual struggle, a similar mechanism may lead Scholars to change their broader world viewpoints.

Conclusions

Results from this study highlight major fault lines in postsecondary educational opportunity and provide new information for researchers, policy-makers, and practitioners interested in improving college access for at-risk students and fostering resilience among college aspirants. The results indicate that students' pathways to college are shaped by interactions between opportunity structures and backgrounds characteristics and resilience is a multifaceted construct. Students who are more resilient endure adversity in their lives to achieve greater educational opportunities, while less resilient students succumb to external pressure at the expense of educational opportunities.

The study reaffirms the importance of needs-based Scholarships for improving equality of educational opportunity by helping recipients realize postsecondary education aspirations, and for providing researchers a lens through which to study and ultimately learn from unique populations of students. By studying at-risk students who come from considerably more disadvantaged households than the average U.S. high school students while managing to achieve academic success and actively engaging in their communities, the HAA Scholarship Program is an important catalyst by which we can improve our understanding of resilience. Results from the present study may be used to enhance pathways to college among at-risk students by tailoring interventions and designing support programs around the knowledge that community involvement

is uniquely valuable for overcoming adversity and entering postsecondary education, and that the keys to resilience include taking steps to reduce adverse experiences, mentally reframing adversity in constructive ways, and adopting a future orientation.

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Table 1. Population Means (Standard Deviations) of 2009-2010 HAA Scholarship Applicants

	Value Range	All Applicants	Scholarship Recipients	Non-Recipients
Demographics, Family, and Socioeconomic Characteristics				
Female	0.00 – 1.00	0.72	0.66	0.73
		(0.45)	(0.46)	(0.44)
Family income	$0.00 - $151,196.00	$26,789.14	$19,512.00	$27,921.86
		($14,912.09)	($13,547.94)	($14,795.41)
Parental unemployed	0.00 – 1.00	0.17	0.20	0.16
		(0.37)	(0.40)	(0.37)
Number of dependents in household	0.00 – 14.00	3.59	3.49	3.60
		(1.55)	(1.67)	(1.54)
Disabled	0.00 – 1.00	0.07	0.10	0.06
		(0.25)	(0.31)	(0.24)
Academic Achievement and Involvement				
ACT (converted SAT)	11.00 – 36.00	22.32	23.53	22.15
		(4.61)	(4.58)	(4.58)
Participation in high school activities	0.00 – 1.00	0.96	0.98	0.95
		(0.21)	(0.14)	(0.21)
Participation in community activities	0.00 – 1.00	0.91	0.95	0.01
		(0.29)	(0.22)	(0.29)
Employment during high school	0.00 – 1.00	0.52	0.65	0.50
		(0.49)	(0.48)	(0.50)
High School Conditions				
Student-to-teacher ratio	0.00 – 56.19	17.17	16.02	17.29
		(4.83)	(4.38)	(4.86)
Percent minority students	0.00 – 100.00	45.01	33.95	46.22
		(33.12)	(31.52)	(33.07)
Urbanicity[a]	1.00 – 4.00	2.41	2.45	2.60
		(1.19)	(1.19)	(1.19)

Source: 2009-2010 HAA Applicant Data; 2009-2010 Common Core of Data (CCD); 2007-2008 Private School Survey (PSS).

[a] Urbanicity is based on information contained in the 2009-2010 CCD (*ULOCAL09*) and 2007-2008 PSS (*UCOMMTYP)* files, where 1= Urban , 2= Suburban, 3 = Town, and 4 = Rural. The numbers shown are based on those cases in the HAA Application data that were matched to CCD and PSS files.

Table 2. Rates of Postsecondary Enrollment by Student and School Characteristics among National Sample of 2004 High School Seniors

	Two-Year College Enrollment	Four-Year College Enrollment	No College Enrollment	Sign
Family and Socioeconomic Characteristics				
Family income (in 2001 dollars)				**, ††
Less than $15,000	10.19%	4.38%	17.48%	
$15,001–$25,000	12.12%	5.88%	18.61%	
$25,001–$35,000	13.46%	8.54%	16.56%	
More than $35,000	64.23%	81.19%	47.35%	
Parental unemployment	22.50%	18.53%	27.87%	**, †
Number of dependents in household				**, ††
0–2	53.01%	54.12%	48.44%	
3–4	38.04%	40.36%	38.11%	
5 or more	8.95%	5.52%	13.45%	
Disabled	13.70%	4.82%	22.41%	**, ††
Academic Achievement and Involvement				
ACT (converted SAT)				**, †
20 and lower	70.01%	60.99%	76.53%	
21 through 28	28.25%	33.11%	21.72%	
29 and higher	1.74%	5.90%	1.76%	
Participation in community activities	54.71%	77.04%	34.93%	**, ††
Employment during high school	84.79%	86.78%	81.42%	**, †
High School Conditions				
Student-to-teacher ratio				**, †
Low (15 and lower)	27.66%	31.60%	25.82%	
Medium: 16–25	65.48%	65.14%	67.91%	
High: 26 and higher	6.85%	3.26%	6.27%	
Percent minority students				**, ††
Low: 33% and less	53.97%	65.73%	48.30%	
Medium: 34%–66%	24.66%	20.02%	25.06%	
High: 67% and above	21.37%	14.25%	26.64%	
Urbanicity				**, †
Urban	26.72%	32.22%	31.52%	
Suburban	52.49%	50.12%	48.06%	
Town and Rural	20.79%	17.66%	20.42%	

Source: ELS: 2002 Restricted Data (*Weighted Student Sample N* = 3,388,460; *Un-weighted Sample N* = 16,200).

Group mean differences for Four-Year College Enrollment vs. No College Enrollment: * $p < 0.01$, ** $p < 0.001$.

Group mean differences for Two-Year College Enrollment vs. No College Enrollment: † $p < 0.01$, †† $p < 0.001$.

Table 3. Rates of Enrollment by College Selectivity among National Sample of 2006 College Enrollees

	Enrolled in Inclusive School	Enrolled in Moderately Selective School	Enrolled in Selective School	Sign
Family, and Socioeconomic Characteristics				
Family income (in 2001 dollars)				**, ††
Less than $15,000	8.35%	4.12%	2.26%	
$15,001–$25,000	9.25%	6.10%	3.44%	
$25,001–$35,000	12.59%	9.16%	5.12%	
More than $35,000	69.79%	80.62%	89.18%	
Parental unemployment	20.46%	17.41%	18.90%	**, ††
Number of dependents in household				**, ††
0–2	52.47%	52.35%	57.59%	
3–4	40.03%	42.17%	38.02%	
5 or more	7.50%	5.48%	4.39%	
Disabled	9.15%	4.58%	2.55%	**, ††
Academic Achievement and Involvement				
ACT (converted SAT)				**, ††
20 and lower	63.63%	35.71%	8.67%	
21 through 28	33.46%	58.17%	62.41%	
29 and higher	2.91%	6.12%	28.93%	
Participation in community activities	63.05%	75.92%	87.52%	**, ††
Employment during high school	83.02%	87.63%	87.86%	**, ††
High School Conditions				
Student-to-teacher ratio				**, ††
Low (15 and lower)	26.62%	30.38%	36.55%	
Medium: 16–25	68.38%	66.54%	61.07%	
High: 26 and higher	5.00%	3.08%	2.38%	
Percent minority students				**, ††
Low: 33% and less	46.04%	68.94%	74.11%	
Medium: 34%–66%	24.01%	18.86%	19.03%	
High: 67% and above	29.94%	12.19%	6.86%	
Urbanicity				**, ††
Urban	38.22%	29.02%	32.85%	
Suburban	45.55%	51.27%	51.49%	
Town and Rural	16.22%	19.71%	15.65%	

Source: ELS: 2002 Restricted Data (*Weighted Student Sample, N* = 3,388,460; *Un-weighted Student Sample*, *N* = 14,470).

Group mean differences for enrollment in a Moderately Selective College vs. a Selective College: * $p < 0.01$, ** $p < 0.001$.

Group mean differences for enrollment in an Inclusive College vs. a Selective College: † $p < 0.01$, †† $p < 0.001$

Table 4. Rates of Full- and Part-Time Enrollment by College Selectivity among National Sample of 2006 Four-Year College Enrollees

	Full Time Enrollment	Part Time Enrollment	Sign
Family, and Socioeconomic Characteristics			
Family income (in 2001 dollars)			**
Less than $15,000	4.27%	6.82%	
$15,001–$25,000	5.52%	13.34%	
$25,001–$35,000	8.44%	10.81%	
More than $35,000	81.77%	69.03%	
Parental unemployment	18.47%	20.22%	**
Number of dependents in household			**
0–2	54.06%	55.40%	
3–4	40.60%	34.95%	
5 or more	5.34%	9.65%	
Disabled	4.38%	14.62%	**
Academic Achievement and Involvement			
ACT (converted SAT)			**
20 and lower	30.72%	61.58%	
21 through 28	55.76%	34.70%	
29 and higher	13.51%	3.71%	
Participation in community activities	78.46%	48.77%	**
Employment during high school	86.85%	85.31%	**
High School Conditions			
Student-to-teacher ratio			**
Low (15 and lower)	32.22%	19.97%	
Medium: 16–25	64.56%	76.06%	
High: 26 and higher	3.22%	3.96%	
Percent minority students			**
Low: 33% and less	66.35%	54.20%	
Medium: 34%–66%	20.09%	18.12%	
High: 67% and above	13.56%	27.68%	
Urbanicity			*
Urban	32.02%	35.47%	
Suburban	50.43%	44.30%	
Town and Rural	17.55%	20.23%	

Source: ELS: 2002 Restricted Data (*Weighted Student Sample, N* = 1,350,670; *Un-weighted Student Sample*, *N* = 6,490).
Group mean differences for Full-time vs. Part-time Enrollment: * $p < 0.01$, ** $p < 0.001$.

Table 5. 2009-2010 HAA Applicants Relative to a ELS Sample of 2004 High School Seniors

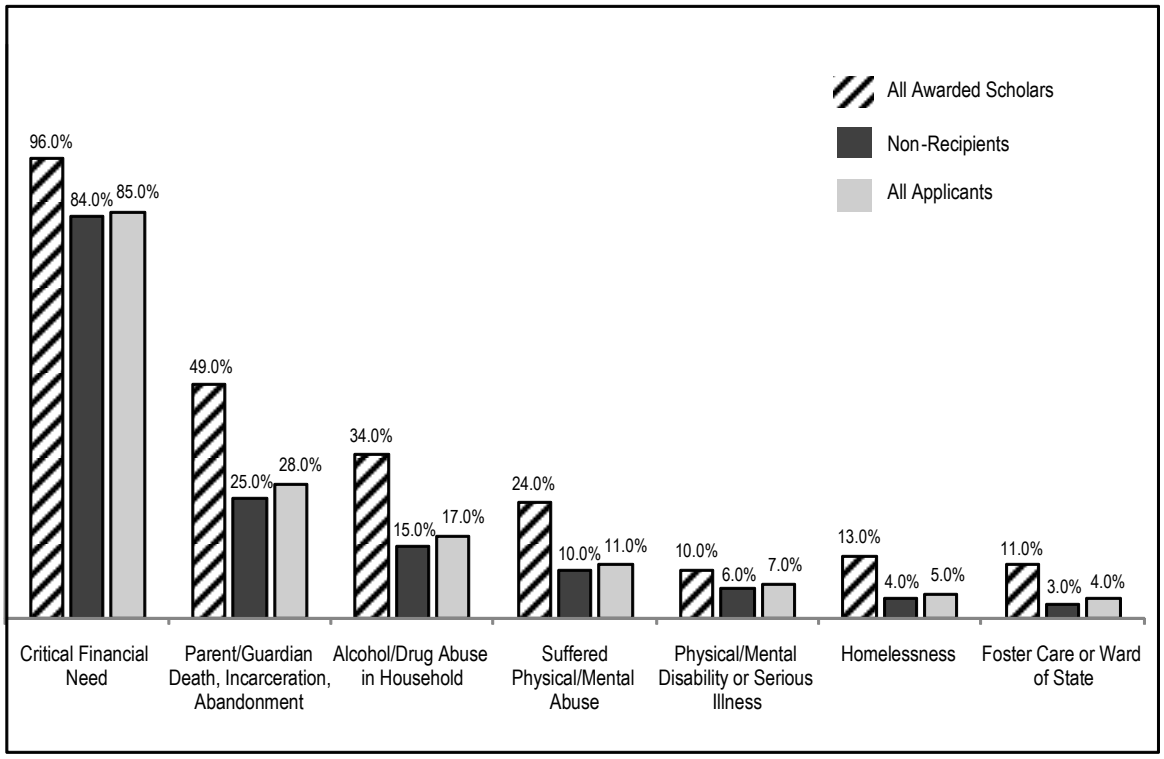
	HAA Applicants		National Comparison Population	Sign
	Total Applicants	Scholarship Recipients		
Family, and Socioeconomic Characteristics				
Family income ($\$_{2001}$)				**, ††
Less than $15,000	32.71%	52.93%	9.71%	
$15,001 - $25,000	26.67%	25.87%	11.24%	
$25,001 - $35,000	23.56%	15.36%	12.21%	
More than $35,000	17.24%	5.92%	66.85%	
Parental unemployment	16.71%	20.00%	22.29%	** †
Number of dependents in household				** ††
0 – 2	24.67%	28.04%	52.26%	
3 – 4	52.95%	50.24%	39.06%	
5 or more	23.16%	21.72%	8.68%	
Disabled	6.77%	10.41%	12.19%	** †
Academic Achievement and Involvement				
ACT (converted SAT)				** ††
20 and lower	36.27%	27.87%	69.45%	
21 through 28	53.85%	57.70%	26.55%	
29 and higher	9.88%	14.43%	4.00%	
Participation in community activities	90.93%	94.79%	58.72%	** ††
Employment during high school	51.53%	64.56%	84.92%	** ††
High School Conditions				
Student-to-teacher ratio				** ††
Low (15 and lower)	32.96%	43.33%	28.71%	
Medium: 16-25	61.57%	54.54%	66.06%	
High: 26 and higher	5.47%	2.12%	5.23%	
Percent minority students				**
Low: 33% and less	56.11%	59.65%	57.05%	
Medium: 34%-66%	24.56%	19.49%	22.90%	
High: 67% and above	31.55%	20.85%	20.05%	
Urbanicity				** ††
Urban	29.42%	29.48%	30.38%	
Suburban	29.03%	24.76%	50.20%	
Town and Rural	41.50%	45.80%	19.41%	

Source: 2009-2010 HAA Applicant Data (*N = 16700);* ELS: 2002 Restricted Data (*Weighted Student Sample N* = 3,388,460; *Un-weighted Sample N* = 16,200).

Group mean differences for HAA Total Applicants vs. National Comparison Data: * $p < 0.01$, ** $p < 0.001$.

Group mean differences for HAA Scholarship Recipients vs. National Comparison Data: † $p < 0.01$, †† $p < 0.001$

Figure 1: Adversity Experiences among 2009–2010 HAA Applicants



Source: 2009–2010 HAA Applicant Data

Figure 2. Analysis plan for examining the open-ended narratives