

**IMPACT OF STUDENT AID PROGRAM DESIGN, OPERATIONS, AND
MARKETING ON THE FORMATION OF FAMILY COLLEGE-GOING
PLANS AND
RESULTING COLLEGE-GOING BEHAVIORS OF
POTENTIAL STUDENTS**

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This report was commissioned by TERI to provide a review of existing research findings, focused on the impact of student aid program design, operations, and marketing. This report was prepared under the direction of Ann Coles (Senior Vice President of TERI, coles@teri.org) and David Mundel (a consultant to TERI, david.mundel@comcast.net).

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IMPACT OF STUDENT AID PROGRAM DESIGN, OPERATIONS, AND MARKETING ON THE FORMATION OF FAMILY COLLEGE-GOING PLANS AND RESULTING COLLEGE-GOING BEHAVIORS OF POTENTIAL STUDENTS

Summary

This paper reviews and synthesizes research from a variety of disciplinary perspectives to describe what is known about two questions that relate to college-going behaviors:

- To what extent have families, especially families of lower income and minority students, been affected by their awareness, understanding, and predictions of college prices and student aid program resources? and
- To what extent have families' awareness, understanding, and predictions of college prices and student aid programs been influenced by student aid program design, operations, and marketing activities?

Formation of Students' College-Going Aspirations, Expectations, and Plans

Parents play a central role in the development of students' aspirations, expectations, and plans for college. Although most parents provide encouragement for their children's postsecondary aspirations and planning, low-income parents and parents with no college experience often do not have the knowledge, information, and other resources that are necessary to adequately guide their children through the search and choice phases of the college enrollment process.

Economic, social, and psychological barriers limit the involvement of low-income and minority parents. Low-income, African American, and Hispanic students and parents are less likely than other students and parents to gain access to the resources that promote college enrollment through social networks. Structural barriers, including the focus of schools on bureaucratic processes and the limited duration of interactions with teachers and counselors, restrict the extent to which information may be acquired from school personnel.

Level of Awareness, Understanding, and Predictions of College Prices and Financial Aid

Many students and parents, even those who expect college attendance, are uninformed, or poorly informed, about college prices and student financial aid. Simply having information about college prices and financial aid does not ensure the accuracy of the knowledge among students or parents; students and parents tend to overestimate college prices. Levels of awareness and understanding of college prices and financial aid are particularly low among Latino and Black students and parents, although more research has focused on probing the understandings of Latinos. The relationship between parental education and income and student awareness and understanding of college prices and financial aid has not been consistently established. Parents with direct experience with higher education, either via their own or another child's educational attainment, have greater, and more accurate, knowledge than other parents of college prices and student financial aid.

“Effects” of Awareness, Understanding, and Predictions of College Costs and Financial Aid on College Plans and Enrollment

Inadequate awareness and understanding of college prices and financial aid may be one source of the gap between the higher educational expectations that students declare in high school and their lower rates of actual postsecondary education. Researchers speculate about, and students perceive, that such a relationship exists. A variety of college-related outcomes are lower for students who have less knowledge and information about college prices and financial aid than for other students. Nonetheless, while students’ and parents’ awareness and understanding of college prices and financial aid are positively related to such outcomes as college expectations, application, enrollment, choice, and financing strategies, the direction of causality is ambiguous. In other words, research does not reveal the extent to which knowledge and information are a cause or consequence of college-related outcomes.

Effects of Student Aid Program Design, Operations, and Marketing Activities on Awareness, Understanding, and Predictions of College Prices and Financial Aid

Little is known about the ways in which student aid design, operations, and marketing influence students’ and parents’ awareness, understanding, and predictions of college prices and financial aid. Attention to the design of student aid programs focuses on the complexity of the eligibility and application processes for federal financial aid with little focus on the ways in which elementary and secondary schools as well as colleges and universities “market” financial aid to students.

Research on the timing of awareness and understanding of college prices and financial aid suggests that either student aid program design and operations typically do not target students or parents early in the educational pipeline or that early marketing efforts have minimal impact. Most students and their parents acquire knowledge and information about college prices and financial aid only during the final years of high school, likely after having made decisions (particularly with regard to academic preparation) that influence their ability to attend college.

Many entities are, or should be, involved in the marketing of student aid programs, as suggested by the variety of sources from which parents and students obtain information about college costs, financial aid, and other college requirements. Language barriers restrict the sources of information that are available to parents with limited English proficiency, causing at least some parents to rely on their children for college-related information. Compared to White students and parents, African American, Hispanic, and low-income students and parents appear to be more dependent on school personnel for information about college. But, the schools that these students typically attend are generally not equipped to provide support for college-admissions related activities. Little is known about the contribution of such sources as the media, friends, and social networks to students’ and parents’ awareness, understanding, and predictions of college prices and financial aid.

Directions for Future Research

Although prior research consistently shows that students and their parents are poorly informed about college prices and financial aid until, at best, the latter years of high school, the implications of poor awareness and understanding for college enrollment are not well understood. This review suggests at least four areas where additional research is necessary.

First, additional research is required to understand the ways in which awareness, understanding, and predictions of college prices and financial aid influence the formation of college aspirations, plans, and enrollment. Although research suggests that college enrollment rates are higher when students and their parents have accurate knowledge and information about college prices and financial aid, findings from this research are limited because the direction of causality between awareness and understanding of college prices and financial aid and such outcomes as college enrollment has not been established.

Second, research should explore the openness of students and parents to information about college prices and financial aid. This review suggests that more needs to be known about the receptivity of different groups of both students and parents to information about college prices and financial aid, as well as the most effective ways of communicating this information to different groups.

Third, research is required to understand the ways in which student aid program design, operations, and marketing influence students' and parents' awareness, understanding, and predictors of college prices and student aid. Research has generally not examined specific features of student aid design, operations, and marketing but has focused on describing the sources that students and parents use to acquire information about college prices and financial aid and the ways in which sources of information vary across groups.

Finally, more research is needed to understand the ways in which elementary and secondary schools, as well as higher education institutions, can ensure that students and parents are knowledgeable about college prices, financial aid, and other college-related requirements and processes. The involvement of low-income, African American, and Hispanic parents in college-planning activities is often limited by economic, social, and psychological barriers, but schools and other community institutions are not adequately compensating for these lower resources.

IMPACT OF STUDENT AID PROGRAM DESIGN, OPERATIONS, AND MARKETING ON THE FORMATION OF FAMILY COLLEGE-GOING PLANS AND RESULTING COLLEGE-GOING BEHAVIORS OF POTENTIAL STUDENTS

A primary purpose of the student financial aid programs established under Title IV of the Higher Education Act of 1965 is to ensure that inadequate financial resources do not limit access to college. Nonetheless, despite nearly 40 years of investment in these programs not only by the federal government but also by state governments, higher education institutions, and other entities, college access and choice remain stratified by both family income and race/ethnicity. Although students received about \$71.6 billion through federally-supported programs in 2002-03 (The College Board, 2003), students with low family incomes, students whose parents have not attended college, African Americans, and Hispanics are less likely than other students to enroll in college and, when they do enroll, are concentrated in lower price institutions, such as public two-year colleges and less selective four-year colleges and universities (Choy, Horn, Nuñez & Chen, 2000; Perna, Steele, Woda, & Hibbert, in press; Thomas & Perna, in press).

Some observers (e.g., Advisory Committee on Student Financial Assistance, 2002; St. John, 2003) argue that continued gaps in educational opportunity are primarily due to the inadequacy of existing financial aid programs, while others (e.g., Perna, in press) acknowledge the importance of student financial aid but stress the barriers that are imposed by inadequate academic preparation. A third explanation for continued gaps in college enrollment may pertain to the adequacy of information not only about financial and academic requirements for attending college, but also about the availability of student financial aid to offset the costs of attendance (Kane, 1999). Lacking adequate and accurate knowledge and information about college prices and student financial aid, some students and their families with early hopes for college attendance may have their hopes diminished by both accurate and biased perceptions of the affordability of higher education. Students and their parents may acquire accurate awareness and understanding of college prices and financial aid in the later years of high school, but at this point in time students are likely unable to correct for such behaviors as dropping out of high school, failing to enroll in college preparatory courses, and performing poorly in high school courses.

This paper describes what is known from prior research about the impact of student financial aid program design, operations, and marketing on the formation of family (including parental and children's) college-going aspirations, expectations, and plans, and the resulting college-going behaviors of potential students. The review focuses on the experiences of lower-income and minority students, as well as students from families in which the parents have not attended college. More specifically, the review of prior research synthesizes what is known about two questions:

- To what extent have families, especially families of lower income and minority students, been affected by their awareness, understanding, and predictions of college prices and student aid program resources? and
- To what extent have families' awareness, understanding, and predictions of college prices and student aid programs been influenced by student aid program design, operations, and marketing activities?

This literature review incorporates research on family college planning and decision making from a variety of disciplinary perspectives, including economics, sociology, and psychology. The review focuses on research conducted after 1985 and includes published articles, reports, and books, as well as unpublished papers.

To set the context for examining the two central questions, first the paper discusses the ways in which students and their families form college-going aspirations, expectations, and plans. Then, the review summarizes what is known about students' and families' awareness, understanding, and predictions of college prices and financial aid, with attention to variations in knowledge and information across groups and the relationship between information and college plans and enrollment. The paper then describes what is known about the relationship between student aid program design, operations, and marketing and awareness, understanding, and predictions of college prices and student aid, with particular attention to the timing and sources of information. The paper concludes by suggesting directions for additional research that will address gaps in knowledge about the effects of students' and families' awareness, understanding, and predictions of college prices and student aid and the ways in which student aid program design, operations, and marketing influence students' and families' awareness, understanding, and predictions.

Formation of Students' College-Going Aspirations, Expectations, and Plans

Summary: Parents play a central role in the development of students' aspirations, expectations, and plans for college. Although most parents provide encouragement for their children's postsecondary aspirations and planning, low-income parents and parents with no college experience often do not have the knowledge, information, and other resources that are necessary to adequately guide their children through the search and choice phases of the college enrollment process. Economic, social, and psychological barriers limit the involvement of low-income and minority parents. Low-income, African American, and Hispanic students and parents are less likely than other students and parents to gain access to the resources that promote college enrollment through social networks. Structural barriers, including the focus of schools on bureaucratic processes and the limited duration of interactions with teachers and counselors, restrict the extent to which information may be acquired from school personnel.

According to Hossler and Gallagher (1987), expecting to attend college, or becoming "predisposed" to college, is the first of three stages in the college enrollment process. Students who are inclined to attend college then "search" for information about colleges (second stage) and subsequently "choose" a particular postsecondary education institution in which to enroll (third stage). Students typically declare their postsecondary plans between the 8th and 10th grades (Hossler, Schmit & Vesper, 1999).

When asked, virtually all middle and high school students and their parents indicate that they "expect" some type of postsecondary education enrollment after high school graduation (Horn, Chen, & Chapman, 2003). Descriptive analyses of parent and student data from the 1999 National Household Education Surveys show that 94% of 6th through 12th grade students report that they will enroll in postsecondary education after high school. Parents of middle and high

school students share these high expectations, as 96% of parents indicate that their child will participate in postsecondary education after high school (Horn et al., 2003).

Although research suggests that the most important determinants of students' predisposition to college are related to parental support and encouragement, other variables also influence students' predisposition. Aside from parental support and encouragement, researchers have also found the following variables to be positively related to students' college predisposition: students' grade point average, having a sibling or family member who had attended college, peers' postsecondary plans, and student involvement in high school organizations and activities (Hossler et al., 1999).

Role of Parents in Formation of Student's Aspirations, Expectations, and Plans

Although the process of becoming predisposed toward college varies across racial/ethnic groups (Hamrick & Stage, 2004; Hossler et al., 1999), parents play a key role in the development of college aspirations and expectations for all students, particularly low-income, African American, and Hispanic students (Hamrick & Stage, 2004; Hossler & Stage, 1992; Hossler, Schmit, & Vesper, 1999). Hossler and colleagues (Hossler & Stage, 1992; Hossler, Schmit, & Vesper, 1999) concluded, based on their study of 1987 high school freshmen in Indiana, that the most important determinant of a student's postsecondary educational plans is parental expectations. Using data from the National Educational Longitudinal Study of 1988 eighth graders (NELS:88) and limiting the analyses to students enrolled at high-minority enrollment and low-income schools, Hamrick and Stage (2004) found that the only measures that were directly related to college predisposition among African Americans pertained to parents: parents' expectations and parents' educational attainment. Parents' expectations for the child's education were also the most important predictor of college-predisposition for White and Hispanic 8th graders. Parents' expectations increased with family income among Whites and African Americans, and increased with parents' education among Hispanics.

Based on their review and synthesis of prior research, Cabrera and LaNasa (2000b) concluded that parental encouragement may be manifested via high expectations for the students' degree attainment, a motivational form of encouragement, and via particular activities, a proactive form of encouragement (Cabrera & LaNasa, 2000b). Proactive activities may include parental involvement in school activities and processes, parental saving for college, and parent-student discussions about college and education-related topics (Cabrera & LaNasa, 2000b). As Grodsky and Jones (2004) speculate, such activities may reflect a parents' level of commitment to their children's educational attainment.

Although focused on understanding the ways in which parents' and student's educational expectations are related to 8th grade academic performance, other research using data from the NELS:88 sheds light on the relationship between parents' and student's expectations. Using a two-stage least squares regression model, Hao and Bonstead-Bruns (1998) concluded that parents' expectations shape the student's expectations through interactions between parents and children in learning activities. Increased parent-child interactions in learning activities promote both the parents' and child's educational expectations, and help ensure that parents' and student's expectations match. Academic achievement, measured in this study by reading test

scores, math test scores, and grade point average, was higher, net of other variables, when parents and students had the same educational expectations (Hao & Bonstead-Bruns, 1998).

Some research suggests that the contribution of parental encouragement to student's college choice processes declines as students progress from 9th to 12th grades, whereas the contributions of parental education and income increase over this period (Hossler et al., 1999). Hossler and colleagues (1999) concluded that parental encouragement is critical to the development of a student's predisposition toward college, but seems to have little effect on either a student's search processes, particularly the number of colleges and universities a student considers attending during the sophomore and junior years of high school, or ultimate decisions of whether to attend college and which institution to attend. In contrast, parental income seems to be unrelated to educational aspirations but positively related to whether and where a student enrolls. Parental education has a positive effect throughout the process, as parental education has been shown to be positively related to educational aspirations, the number of colleges and universities considered, and actual enrollment, as well as the consistency of college plans through the high school years (Hossler et al., 1999). These findings suggest that parents promote high educational expectations among their children by providing support and encouragement but require additional resources, including direct prior experience with higher education (as measured by parental educational attainment), and wealth (as measured by parental income) to positively influence the search and choice phases of the process.

Barriers to Parental Involvement in College-Enrollment Processes

Although most parents want to promote their child's educational attainment, the ability of low-income and minority parents to do so is often limited by economic, social, and psychological barriers. Barriers to parental involvement may be associated with mother's employment, parents' education, family composition, child care responsibilities, language and culture, and discrimination (Kerbow & Bernhardt, 1993; Tierney & Auerbach, in press). Based on their study of families living in low-income census tracts in Philadelphia, Furstenberg and colleagues (1999) concluded that most parents are proficient caregivers who are devoted to and concerned about their children's well-being. However, the ability of parents to advance the achievement of their children increased with the level of parental economic, social, and psychological resources. Students with low socioeconomic status were less likely than other students to be "successful" academically, socially, and psychologically because the neighborhoods in which they lived typically offered fewer opportunities and more threats, and because their parents typically possessed fewer of the resources that were needed to promote their children's "success" (Furstenberg et al., 1999). With regard to college enrollment specifically, Furstenberg and colleagues (1999) observed that, although parents generally believed that their children needed a college education in order to be successful, many of the low-income parents in their study not only lacked "adequate knowledge of the middle-class world to guide their children in how to succeed" but also lacked the "resources to subcontract with those who did have that knowledge" (p. 226).

Other scholars argue that psychological barriers limit the involvement of low-income and minority parents. Based on their review of psychological theory and research, Hoover-Dempsey and Sandler (1997) identified three theoretical constructs that influence parental involvement in

their children's elementary and secondary education: parents' role construction; parents' sense of self-efficacy; and parents' perceptions that their children's school invites their involvement. Role construction defines parents' views of the behaviors and forms of involvement in their child's education that are appropriate. Self-efficacy describes the extent to which parents believe that their involvement will improve their child's educational success. This framework suggests that parents who have not attended college may be less likely to participate in college planning activities because they do not perceive such activities to be consistent with their role construction and/or because they do not believe that their involvement can have a positive effect on their child's college outcomes.

Differences in social networks may also limit the resources that are available to low-income, African American, and Hispanic students and parents. Although her analyses are based on observations and interviews of parents and teachers of first and second grade students, Lareau's (1987) findings about social class differences in the relationships between parents and schools may be relevant to the experiences of older students. Sources of information about children's education-related activities varied by social class, with working class parents relying on local extended family and middle class parents utilizing parents of other children attending the same school. Similarly, an ethnographic study of third and fourth graders and their families suggests that, regardless of race, middle-class parents draw on social networks that include parents of children who participate in the same extracurricular activities, as well as teachers and other professionals, whereas the social networks of working-class parents are dominated by kinship ties (Horvat, Weininger, & Lareau, 2003). Horvat and colleagues argue that, because of differences in the composition of social networks, middle-class parents are able to draw on more resources than working-class parents to act in ways that advance educational opportunities for their children (e.g., curricular placement, teacher assignment). Based on their multilevel analyses of data from the NELS:92/94, Perna and Titus (in press) concluded that African Americans and Hispanics were disadvantaged in the college enrollment process not only because of their own low levels of the types of economic, human, and cultural capital that were positively related to college enrollment, but also because of the low levels of resources that were available to promote college enrollment through the social networks at the schools they attended.

Because of their lack of economic, social, and psychological resources, low-income and minority parents are more dependent than other parents on the school to guide their child's education. Lareau's (1987) examination of parents and teachers of first and second grade students also shows that, for reasons that include lack of resources (e.g., time, money, job flexibility), absence of knowledge about their child's school experiences, and low levels of formal education, parents at a working class school generally relied on the teacher to educate their child. In contrast, parents at a middle-class school viewed their child's education as a shared and mutually reinforcing process that requires parental involvement in school activities and that occurs both in school and at home. Furstenberg and colleagues (1999) concluded that because low-income students and their families are not "active consumers" in the educational process, schools need to proactively encourage parents to be engaged in their children's education.

Nonetheless, structural barriers limit the extent to which low-income and minority students and parents receive the necessary information from schools. Stanton-Salazar (1997) argued that such institutional agents as teachers, counselors, and middle-class peers provide access to resources

and opportunities including information about college and help with college-admissions requirements but that institutional structures limit the ability of working-class minority students to develop "trusting" relationships with institutional agents. Among the structures that may restrict the growth of social capital for working-class minority students are the focus of schools on bureaucratic processes, the dual role of teachers and counselors as mentors and gatekeepers, and the short-term duration of interactions (Stanton-Salazar, 1997).

Level of Awareness, Understanding, and Predictions of College Prices and Financial Aid

Summary: Many students and parents, even those who expect college attendance, are uninformed, or poorly informed, about college prices and student financial aid. Simply having information about college prices and financial aid does not ensure the accuracy of the knowledge among students or parents; students and parents tend to overestimate college prices. Levels of awareness and understanding of college prices and financial aid are particularly low among Latino and Black students and parents, although more research has focused on probing the understandings of Latinos. The relationship between parental education and income and student awareness and understanding of college prices and financial aid has not been consistently established. Parents with direct experience with higher education, either via their own or another child's educational attainment, have greater, and less biased, knowledge than other parents of college prices and student financial aid.

Based on its review of research published between 1980 and 1989, the GAO (1990) concluded that students and their parents generally lack accurate knowledge and information about college costs and the availability of financial aid to offset the costs. Although their computerized search yielded 74 relevant studies, the GAO concluded, based on critiques by three "experts," that only 18 studies met acceptable standards in terms of substantive relevance, research design, and statistical rigor. Even with this winnowing, the GAO cautioned that the 18 included studies had important limitations, particularly with regard to the external validity of the findings, because of "imprecise question wording, low response rates, and idiosyncratic samples" (p. 9).

Research published since 1985 shows the continued appropriateness of the GAO's (1990) conclusion. Most adults, parents, and students in the 1980s, 1990s, and early 2000s were uninformed or poorly informed about college prices and financial aid (Grotsky & Jones, 2004; Horn et al., 2003; Ikenberry & Hartle, 2000).

Although some students and their parents may be unaware of college costs and financial aid because they do not expect college enrollment (Grotsky & Jones, 2004), the lack of awareness and understanding about college costs and financial aid is evident even among students and parents who report that they expect college attendance. Nationwide, more than two-thirds (69%) of 9th and 10th graders and one-third (37%) of 11th and 12th graders who planned to attend postsecondary education in 1999 neither were able to estimate the cost of attending nor had acquired information about the costs (Horn et al., 2003). Compared with students, smaller shares of parents of 9th and 10th graders (47%) and parents of 11th and 12th graders (29%) had no information or estimate of college costs (Horn et al., 2003).

Simply having information does not ensure that estimates of college prices and financial aid are unbiased. Although nearly all (90%) adults think that they know how much a college education costs, substantially fewer adults have accurate information (Ikenberry & Hartle, 2000). Most adults (70%) overestimate the cost of tuition at public colleges and universities. The greatest knowledge gap is for the most affordable college option, community colleges, as respondents' estimates of tuition at community colleges exceeded actual tuition by 300% (Ikenberry & Hartle, 2000). Because of the magnitude, overestimation of college prices cannot be explained only by potential confusion about the difference between tuition and fees versus the total cost of attendance, which includes not only tuition and fees but also room and board, books, and transportation.

The upward bias of college price estimates is also evident among the potential college-going population. Controlling for variations in costs across states, only 24% of 11th and 12th grade students and 31% of parents of 11th and 12th graders who reported that they had obtained college cost information, or who thought they were able to estimate costs, actually provided accurate cost estimates for the type of institution that they expected to attend (Horn et al., 2003). Higher percentages of both students and parents overestimated, rather than underestimated, actual costs (Horn et al., 2003). The tendency of parents to overestimate tuition and fees appears to hold regardless of household income, parents' education, or race/ethnicity (Grotsky & Jones, 2004).

Several recent studies document the extent to which Hispanic students and parents are uninformed or poorly informed about college prices and financial aid. In an exploratory study of the obstacles to college enrollment among Hispanic high school seniors, Immerwahr (2003) noted that many students who are academically qualified to attend college are "shockingly misinformed about higher education" (p. vi), particularly in terms of college admissions and financial aid processes. A survey of 1,222 parents of 18- to 24-year olds and 1,204 young adults aged 18 to 24 showed that substantially smaller shares of Latino parents and young adults than of other parents and young adults were able to name at least one source of financial aid for college (e.g., scholarships, grants, or loans, Tomás Rivera Policy Institute, 2004). Only 49% of Latino parents, compared with 81% of all parents, and 57% of Latino young adults, compared with 82% of all young adults, were able to name one or more sources of financial aid (Tomás Rivera Policy Institute, 2004). One-third of Latino parents and 50% of Latino youth reported receiving information about financial aid from an elementary or secondary school, compared with 75% of all parents and all young adults (Tomás Rivera Policy Institute, 2004).

Other research demonstrates Latino parents' low levels of financial aid knowledge. Tornatzky and colleagues (2002) developed an eight-question "mini-test" to assess basic parental college knowledge of financial aid as well as Advanced Placement, college preparatory curricula, SAT examinations, and differences between two-year and four-year institutions among 1,054 Latino parents in three states. Although 96% of Latino parents expected their child to attend college, two-thirds knew the answers to no more than four of the eight basic test items. Latino parents with lower incomes and education, as well as first-generation immigrants, were less knowledgeable than other Latino parents (Tornatzky, Cutler, & Lee, 2002).

Other research suggests that African American parents are less knowledgeable about college prices than White parents. One study shows that, compared to White parents, Black parents of

9th to 12th graders nationwide are less likely to accurately estimate college costs after controlling for gender, parents' education, household income, grade point average, and parental involvement in the child's school (Horn et al., 2003). Other analyses suggest that, after controlling for parents' education, family income, student achievement, and other variables, African American, Hispanic, and Spanish-speaking parents of 6th through 12th graders nationwide are less likely than other parents to give an estimate of tuition and fees at the type of institution that the child will likely attend (Grotsky & Jones, 2004).

Parental awareness and understanding of college prices and financial aid are greater when the parent and/or an older child have attended college and when parents' income is higher. Research shows that parents who attended college, or who have a child who has already entered college, are more likely than other parents to believe they know about student financial aid (Brouder, 1987; Hossler, Schmit & Bouse, 1991). After controlling for student achievement, student grade level, and other variables, parents of 6th to 12th grade students in 1999 who had low educational attainment and low incomes were less likely than other parents to have any knowledge of college costs and were less likely to accurately estimate college prices (Grotsky & Jones, 2004; Horn et al., 2003). Although the findings may be outdated, Olson and Rosenfeld (1984) found in their examination of data from the High School and Beyond 1980 Parent Survey that, after controlling for primary language spoken at home and parents' educational expectations for the child, knowledge of three financial aid programs (BEOG, Guaranteed Student Loan Program, National Direct Student Loan Program) increased among parents of both high school sophomores and high school seniors with the parents' level of educational attainment. Net of other variables, parents of high school sophomores who had another child in college were also more likely than other parents to be knowledgeable of the programs. (The variable, other child in college, was unavailable for the parents of high school seniors.)

Findings regarding the relationship between students' awareness and understanding of college prices and financial aid and socioeconomic characteristics are contradictory. For example, in a comprehensive study of students attending 21 high schools in Indiana in the late 1980s, lower levels of parental education and family income were associated with higher levels of student knowledge of postsecondary costs and financial aid (Hossler, Schmit & Bouse, 1991). In contrast, Horn and colleagues (2003) found that 6th through 12th grade students nationwide in 1999 whose parents had lower educational attainment and lower household incomes were less likely than other students to be knowledgeable about college costs after controlling for students' grade level in school, grade point average, and other variables. Findings from McDonough's (1997) case study analysis of students attending four high schools in California suggest at least two potential explanations for the contradictory relationships. Although the study did not examine the relationship, findings from McDonough (1997) suggest that perceived responsibility for becoming informed about college prices and financial aid may vary by socioeconomic background. Students from high-SES families may assume that their parents are responsible for funding the costs of their postsecondary education, whereas students from low-SES families may assume that they, not their parents, are responsible for college costs (McDonough, 1997). Other findings from McDonough (1997) suggest that the availability of college-related information that at a school is positively related to the socioeconomic background of students attending the school.

“Effects” of Awareness, Understanding, and Predictions of College Costs and Financial Aid on College Plans and Enrollment

Summary: Inadequate awareness and understanding of college prices and financial aid may be one source of the gap between the high educational expectations that students declare in high school and their lower rates of actual postsecondary education. Researchers speculate about, and students perceive, that such a relationship exists. A variety of college-related outcomes are lower for students who have less knowledge and information about college prices and financial aid than for other students. Nonetheless, while students’ and parents’ awareness and understanding of college prices and financial aid are positively related to such outcomes as college expectations, application, enrollment, choice, and financing strategies, the direction of causality is ambiguous. In other words, research does not reveal the extent to which knowledge and information are a cause or consequence of college-related outcomes.

Actual college enrollment behavior falls short of students’ high expectations (Schneider & Stevenson, 1999), suggesting that stated expectations are often more hopeful than realistic (Furstenberg et al., 1999; Tobolowsky, 2004). In their ethnographic study, Furstenberg and colleagues (1999) noted that high parental expectations for a child’s educational attainment may be an indicator of parents’ high “hope in their teens’ future” (p. 201). Based on her exploratory study of 40 Latina and African American 10th grade girls, Tobolowsky (2004) concluded that merely considering students’ stated “plans” to attend college was insufficient, since many students who reported planning to attend college were not engaged in activities that help ensure the realization of this goal, including visiting college campuses, searching for information about specific colleges and academic majors, and earning high grades in high school courses. Although not examined in her study, developing an understanding of the price of attending college and the ways of paying the price may also contribute to the conversion of “hopes” into realistic plans.

Variations in knowledge and information of college prices and financial aid across groups may be a source of the larger gap between stated educational aspirations and actual college enrollment for Blacks and Hispanics than for Whites that has been found in some research (e.g., Immerwahr, 2003; Wimberly, 2002). Kao and Tienda (1998) argue that educational aspirations decline as a student moves from middle to high school as a student’s postsecondary plans become less “abstract” and more “concrete” or realistic, or as students become more informed about college requirements. Descriptive analyses of data from the NELS:88/92 show that educational aspirations are higher and more stable from the 8th through 12th grades among Asians and Whites than among Blacks and Hispanics. Between the 8th and 10th grades, educational aspirations fell from graduate school to no more than a bachelor’s degree for 25% of Blacks and Hispanics, but only 10% of Whites and less than 10% of Asians. The greater decline in aspirations for Blacks and Hispanics than for Whites and Asians appears to be primarily attributable to average differences in socioeconomic status. Multivariate analyses reveal that both educational aspirations and the stability of educational aspirations increase with parents’ education and family income after controlling for other variables.

Some researchers speculate that inadequate knowledge and information about college prices and financial aid limit college enrollment. Although not empirically examined, Kane (1999) argued that greater knowledge of tuition than of the availability of financial aid may explain the greater responsiveness of the college enrollment of low-income students to tuition levels than to the expansion of federal financial aid programs in the late 1970s. Based on quantitative analyses of surveys of approximately 500 low-income families, and qualitative case studies of a smaller number of families, Furstenberg and colleagues (1999) hypothesized that a substantial portion of students were unlikely to enroll in or complete college because their parents lacked not only sufficient financial resources to pay the costs of college attendance, but also knowledge about “how to locate and secure the little financial aid possibly available to them” (p. 201).

Similarly, St. John et al. (2002) argued that, “[I]t is plausible that the promise of funding implicit in [Indiana’s] Twenty-first Century Scholars program reduces parental and student concerns about college costs and thus encourages preparation” (p. 20). St. John and colleagues found that program participants were more likely than non-participants to enroll in a public two-year college, public four-year college, private college, and out-of-state college than program non-participants after controlling for student and family background characteristics, postsecondary aspirations, and high school characteristics. Nonetheless, the research design only considers whether students participated or did not participate in the program and, therefore, does not identify whether the promise of financial aid, or other program components, promote college enrollment. Participants in the program (all low-income students) are required to pledge, as 8th graders, that they will pursue a college preparatory curriculum in high school. In return, participants are eligible to receive state and federal grants that cover the cost of tuition at an in-state public college, as well as such support services as tutoring, mentoring, visits to college campuses, workshops on careers and SAT preparation, workshops for their parents, and regular mailings on financial aid and other topics.

Some data suggest that students believe that inadequate knowledge and information is a barrier to college enrollment. A study probing the awareness and understanding of Latinos shows that the majority of Latino parents of 18 to 24 year olds (70%) and Latino 18 to 24 year olds (69%) who are currently attending, or recently graduated from, college report that receiving information about financial aid before graduating from high school was “very important” to their college enrollment (Tomás Rivera Policy Institute, 2004). In addition, nearly one-half of Latino parents (46%) and Latino youth (43%) who did not attend college reported that receiving “better” information about financial aid would have increased the likelihood of college enrollment (Tomás Rivera Policy Institute, 2004).

Although research shows a positive relationship between knowledge and information about college prices and financial aid and various college-related outcomes including college expectations, application, enrollment, choice, and finance strategies, the direction of causality is equivocal. With regard to college expectations, Horn et al. (2003) found that, after controlling for students' grade level in school, sex, race/ethnicity, language spoken at home, grade point average, parents' education, and family income, knowledge of college costs was more common among both students and parents when students planned to attend a private four-year institution rather than other types of institutions. Similarly, among a sample of parents of 8th graders in Illinois in 1986, Flint (1993) found that parental knowledge of financial aid in the form of grants

was indirectly related to the average tuition of institutions that parents of 8th graders identified as options for their children after controlling for student demographic characteristics and other variables. In other words, parents who were aware of financial aid grant programs had higher degree aspirations for their child. Nonetheless, neither study reveals whether college expectations increased because students and parents had knowledge and information about college prices and financial aid and/or if students and parents with high expectations were more likely than those with lower expectations to acquire this knowledge and information.

Some research shows a positive relationship between students' awareness of financial aid and applying to a four-year college. Using logistic regression analyses of data from the NELS, Cabrera & LaNasa (2000a) showed that, after controlling for socioeconomic status, student aspirations, academic qualifications for college, parental expectations, high school assistance with college application processes, and other variables, students who had information about financial aid were more likely than other students to apply for admission to a four-year college or university.

Other research shows that knowledge of college costs and financial aid is positively related to such aspects of college enrollment as the types of institutions in which students enroll and the intensity of enrollment. Using data from the High School and Beyond longitudinal survey of 1980 high school sophomores and seniors, Ekstrom (1991) found that, after controlling for other characteristics, students who were knowledgeable of financial aid were more likely than other students to enroll in college, enroll in a four-year than a two-year college, and enroll full-time rather than part-time. Knowledge of college costs was positively related to the probability of enrolling in a four-year rather than a two-year institution as well as the probability of enrolling full-time rather than part-time, net of other variables (Ekstrom, 1991).

Research using a more recent cohort of students also shows a positive relationship between information about financial aid and enrollment in a four-year college or university. Using multinomial logit analyses of data from the NELS:90/94, Plank and Jordan (2001) found that the magnitude of the positive relationship between SES and four-year college enrollment declined when measures of information, guidance, and actions were added to the model. Specifically, after controlling for student demographic characteristics and other variables, the likelihood of enrolling in a four-year institution within two years of graduating from high school was higher for students whose parents used a greater number of sources to learn about financial aid than for other students. Financial aid information sources were measured by the total number of the following that parents used to acquire information about financial aid in 1992, when students were high school seniors: talking with a high school guidance counselor, talking with a college or trade school representative, talking with a bank loan officer, talking to another informed individual, reading information published by the U. S. Department of Education, reading information published by a college or trade school, and reading information from a branch of the military.

Also assuming that knowledge of financial aid increases with the number of sources used to obtain college-related information, other research shows a positive relationship between knowledge and information and the level of satisfaction with the college choice (Hamrick & Hossler, 1996). Hamrick and Hossler (1996) identified five approaches to gathering college-

related information: talk to parents, teachers, or counselors; pick up information; ask parents for information; write or request information; and visit college campuses. Using discriminant analysis and a longitudinal sample of high school students in Indiana, Hamrick and Hossler (1996) showed that, compared with students who used only one to four of the possible information gathering approaches, students who engaged in at least four types of information gathering were more likely to believe that they had sufficient information to inform their college choice, were more confident of their identification of colleges to which to apply, were more confident of their choice of academic major field, and were more satisfied with their college choice during the first year of college (Hamrick & Hossler, 1996).

Nonetheless, although these studies (Cabrera & LaNasa, 2000a; Ekstrom, 1991; Hamrick & Hossler, 1996; Plank & Jordan, 2001) show a positive relationship between knowledge of college prices and financial aid and college application, enrollment, and choice, conclusions are limited by ambiguity in the direction of causality. In the absence of an examination of changes over time in knowledge and information about college prices and financial aid along with changes in expected college outcomes, findings from prior research may be interpreted as showing that knowledge of prices and aid causes college enrollment, and/or that individuals who plan to apply and enroll in college become knowledgeable about prices and aid.

Similar questions about the direction of causality also limit conclusions that may be drawn from research that shows a positive relationship between knowledge of college prices and financial aid and such college financing strategies as students' willingness to borrow, student use of financial aid, and parental saving for college. Using data from the High School and Beyond longitudinal survey of 1980 high school sophomores and seniors, Ekstrom (1991) found that, although the model explained little of the variance in willingness to borrow, students who were knowledgeable about college costs were more likely than other students to be willing to borrow. Students who reported that they would be willing to borrow to pay \$1,500 in college costs that could not be covered by family or other sources of financial aid were more likely than other students to enroll in college within four years of graduating from high school, more likely to enroll in a four-year than a two-year institution, and more likely to enroll full-time than part-time even after controlling for background characteristics, educational aspirations, academic achievement, encouragement from significant others, and knowledge of college costs and financial aid (Ekstrom, 1991).

Measuring parental knowledge of financial aid by parents' use of financial aid for their own postsecondary education, other research shows a positive relationship between knowledge and use of financial aid among students who are currently enrolled in college. Using path analysis and data from the cross-sectional 1990 National Postsecondary Student Aid Survey, Flint (1997) found that parents' use of financial aid for their own postsecondary education was positively related to the total amount of financial aid that the child received even after controlling for parents' education, parents' contribution to the total costs, tuition, and other variables.

With similar questions about the direction of causality, other research shows a positive relationship between parental saving and such proxies for parental knowledge and information as parental educational attainment and whether an older child attended college (Hossler & Vesper, 1993). Based on their analyses of both quantitative and qualitative data describing the

experiences of students and their parents in Indiana during the late 1980s, Hossler and Vesper (1993) concluded that parental saving for postsecondary education is determined by parents' knowledge of college costs (e.g., whether another child attending college) as well as parental ability to save (e.g., family income, parents' education), parental incentives to save (e.g., amount willing to pay for postsecondary education, concerns about college costs), parental encouragement (e.g., parental aspirations for the student's degree attainment, parental support for postsecondary education, parent discussions with the student), student's potential for success in postsecondary education (e.g., student grade point average, school activities), and a student's commitment to postsecondary education (e.g., student degree aspirations, whether aspirations developed prior to high school, consistency of aspirations). Perceived need for help in paying the costs of postsecondary education was also related to parental saving. Both parents who reported no need for outside help in paying college costs and parents who did not know whether they would need help were more likely than other parents to save (Hossler & Vesper, 1993).

Effects of Student Aid Program Design, Operations, and Marketing Activities on Awareness, Understanding, and Predictions of College Prices and Financial Aid

Summary: Little is known about the ways in which student aid design, operations, and marketing influence students' and parents' awareness, understanding, and predictions of college prices and financial aid. Attention to the design of student aid programs focuses on the complexity of the eligibility and application processes for federal financial aid with little focus on the ways in which elementary and secondary schools as well as colleges and universities "market" financial aid to students.

Research on the timing of awareness and understanding of college prices and financial aid suggests that either student aid program design and operations typically do not target students or parents early in the educational pipeline or that early marketing efforts have minimal impact. Most students and their parents acquire knowledge and information about college prices and financial aid only during the final years of high school, likely after having made decisions (particularly with regard to academic preparation) that influence their ability to attend college.

Many entities are, or should be, involved in the marketing of student aid programs, as suggested by the variety of sources from which parents and students obtain information about college costs, financial aid, and other college requirements. Language barriers restrict the sources of information that are available to parents with limited English proficiency, causing at least some parents to rely on their children for college-related information. Compared to White students and parents, African American, Hispanic, and low-income students and parents appear to be more dependent on school personnel for information about college. But, the schools that these students typically attend are generally not equipped to provide support for college-admissions related activities. Little is known about the contribution of such sources as the media, friends, and social networks to students' and parents' awareness, understanding, and predictions of college prices and financial aid.

Financial Aid Eligibility and Application Processes

Asserting that college financial aid offices now “market” student financial aid programs only when they make a financial aid award to admitted students, Kane (1999) recommended greater attention to the marketing of federal financial aid programs to ensure that all students are aware of, and understand, the procedures for applying for financial aid. Despite this recommendation, little is known about the ways in which colleges and universities contribute to students’ and parents’ awareness and understanding of college prices and financial aid.

Research shows that most parents of dependent students participate in the student aid application process, suggesting that student aid program design, operations, and marketing activities should be aimed at both parents and students. About two-thirds (63%) of 750 parents of currently enrolled dependent college students in one survey reported that their children applied for financial aid before first enrolling in college (Stringer, Cunningham, O’Brien, & Merisotis, 1998). More than 90% of parents of children who applied for financial aid participated in the process. Among parents of aid applicants, most assisted with the application form (84%), gathered information for the child (80%), talked with a financial aid officer (52%) and/or talked with a guidance counselor (49%, Stringer, Cunningham, O’Brien, & Merisotis, 1998).

Researchers’ attention to the design, operations, and marketing of federal student financial aid programs generally focuses on the complexity of the application and eligibility procedures, assuming that such complexity limits students’ and parents’ understanding of their eligibility for student aid and the procedures for obtaining aid. As required by the federal Consolidated Appropriations Act of 2004, the Advisory Committee on Student Financial Assistance is currently conducting a study entitled, “Special Study of Simplification of Need Analysis and Application for Title IV Aid.” The Advisory Committee is charged with identifying changes to the federal need analysis methodology and Title IV application process that will benefit students and their families, especially those with low and moderate incomes (Advisory Committee on Student Financial Aid, 2004a, 2004b). The Advisory Committee conducted two hearings, collecting testimony from more than 40 panelists. Panelists, including staff of various members of Congress, the U.S. Department of Education, associations representing colleges and universities, and pre-college outreach programs, as well as college and university financial aid directors and faculty, consistently voiced support for simplifying the federal financial aid application process for low-income students. Suggested changes (e.g., increasing the use of Internet technology for applications, reducing the number of data elements required, aligning federal student aid eligibility with other federal means-tested programs, increasing student and family knowledge of the financial aid process, and encouraging early notification of financial aid awards and the net cost of college attendance) are aimed at reducing the complexity of the application process rather than increasing students’ and parents’ knowledge and information about the availability of financial aid or procedures for obtaining financial aid. While not specifying the impediments to college enrollment that are caused by an unduly complex application process, panelists appear to believe that low-income students are deterred from applying for federal financial aid by the large number of data items that are required on the FAFSA application, the use of complex language and unfamiliar terminology on the form, and the inability of students and parents to estimate their financial aid award prior to completing the application.

Based on his review of the literature and original analyses, Kane (1999) also argued that simplifying the federal financial aid application process and determination of awards may be a more effective, and less expensive, strategy for raising the college enrollment rates of low-income students than simply increasing the availability of financial aid dollars. Students now only learn how much financial aid they will receive after applying for both college admission and financial aid (Kane, 1999). The Free Application for Federal Student Aid (FAFSA) form is often difficult to complete and does not describe the ways in which a family's expected contribution to the costs of attendance is determined (Kane, 1999). Kane (1999) argued that the transparency gains of a simplified formula are greater than potential loss of targeting resources.

Timing of information

Descriptive analyses suggest that students and their parents typically acquire knowledge and information about college prices and financial aid during the later years of high school, suggesting either that student aid program designs and operations typically do not target students and parents early in the educational pipeline or that early marketing efforts have minimal impact. Cross-sectional data show that higher shares of parents of 1980 high school seniors than of parents of 1980 high school sophomores used some source of information to learn about student financial aid (53% versus 33%, Olson & Rosenfeld, 1984). Longitudinal analyses of students attending 21 high schools in Indiana in the late 1980s suggest that, although students and their parents were generally uninformed about college costs and financial aid when students were in the 9th and 10th grades, about two-thirds of students and their parents were able to provide reasonable estimates of postsecondary costs and were at least moderately knowledgeable of financial aid by the 11th grade (Hossler, Schmit & Bouse, 1991).

More recent national data also suggest that many students and their families are learning about college prices and financial aid late in the educational pipeline. Descriptive analyses of students nationwide in 1999 show that only 36% of 6th through 8th graders, compared with 75% of 11th and 12th graders, talked with their parents, teachers, or counselors about tuition and fees (Horn et al., 2003). Just 27% of 6th through 8th graders talked with their parents, teachers, or counselors about financial aid, compared with 71% of 11th and 12th graders (Horn et al., 2003).

Some students and parents believe that information about financial aid is needed earlier in the educational pipeline, perhaps because having information early encourages students to engage in behaviors that promote college enrollment (e.g., enroll and excel in college preparatory coursework, graduate from high school). Although research is limited to the perceptions of Latinos, the findings may also be descriptive of African Americans and low-income families. One survey suggests that Latino parents and students receive information about financial aid when the young adult is 16 years of age, but that they believe the optimal age for receiving this information is 14 (Tomás Rivera Policy Institute, 2004). About 30% of Latinos age 18 to 24 and 22% of Latino parents of 18 to 24 year olds believe that they needed such information at a younger age (Tomás Rivera Policy Institute, 2004).

Sources of information

Many entities are, or should be, involved in the marketing of student aid programs, as suggested by the variety of sources from which parents and students obtain information about college costs, financial aid, and other college requirements. Descriptive analyses of data from the NELS suggest that 1992 high school seniors nationwide used the following sources to obtain college-related information: talking with high school teachers and counselors, college representatives, and other adults, as well as reading materials describing federal and institutional programs (Cabrera & LaNasa, 2001). Other research suggests that parents often obtain information about college costs from financial aid workshops, conversations with their children, and experiences with another child in college (Hossler & Vesper, 1993).

Language barriers restrict the sources of information that are available to parents with limited English proficiency, causing at least some parents to rely on their children for college information. Interviews of Latino parents suggest that insufficient English language proficiency limits the extent to which information may be obtained from teacher meetings, counselor conferences, written materials, college documents, and meetings with college representatives (Tornatzky et al., 2002). Because of language barriers, many parents rely on their children to inform them about college-related information. Substantial portions of Latinos would prefer to receive information about financial aid in Spanish, with one survey showing that 51% of Latino parents and 38% of Latino youth would prefer information in Spanish rather than English (Tomás Rivera Policy Institute, 2004).

Research suggests that sources of information about financial aid vary based on such demographic characteristic as race/ethnicity and socioeconomic status, with Blacks and students with lower incomes generally depending more than other students on high school personnel for information. Using data from the NELS longitudinal study of 1992 high school graduates, Cabrera and LaNasa (2001) found that students in the lowest SES quartile tended to focus their college-related information-gathering activities on financial aid and were more likely than other students to discuss financial aid with high school personnel and college representatives. After controlling for grade level, family income, student achievement, type of college expected to attend, and other variables, Horn and colleagues (2003) found that Black 6th to 12th grade students nationwide in 1999 were more likely than their White counterparts to talk to parents, teachers, or counselors (considered as a group, not disaggregated) about academic requirements for college, cost of tuition and fees, and financial aid. Although parental education was unrelated to the likelihood that a student talked to parents, teachers, or counselors about these topics, net of other variables, students with household incomes below \$50,000 were more likely than their counterparts with higher household incomes to talk with parents, teachers, or counselors about financial aid (Horn et al., 2003).

Two recent studies, both designed to probe the sources of knowledge and information about college prices and financial aid among Latinos, also suggest that students and parents from underrepresented groups are dependent on teachers and counselors for college-related information. One study shows that, among both parents of 18- to 24-year old Latinos and Latinos aged 18 to 24, teachers and counselors were the most common source of information about financial aid, with 44% of Latino parents and 67% of Latino youth reporting obtaining

information from this source (Tomás Rivera Policy Institute, 2004). A second study shows that Latino parents most frequently name counselors (25%) and teachers (18%) as the sources they perceive to be most informative of “college knowledge,” where “college knowledge” includes financial aid and other aspects of college enrollment (Tornatzky, Cutler, & Lee, 2002).

Despite the dependence of African American, Latino, and low-income students and parents on school personnel for information, some research suggests that knowledge of financial aid is higher among students who rely on sources of information that are not tied to the school than among other students. Although the applicability of the findings to today’s high school students is unclear, Olson and Rosenfeld (1984) found that the most knowledgeable parents of 1980 high school seniors were those who talked with bank loan officers, read U. S. Department of Education materials, and/or read other books or pamphlets about financial aid.

Assuming their continued relevance, findings that suggest that printed materials are the most reliable source of information conflict with findings that suggest parents and students are not inclined to use such sources. Data from a survey focusing on Latino parents and youth suggests that Latino parents and youth prefer to obtain financial aid information from a knowledgeable individual than from such sources as the Internet and printed documents (Tomás Rivera Policy Institute, 2004). The three most preferred sources of information for both Latino parents and students were high school counselors, teachers, and college financial aid offices (Tomás Rivera Policy Institute, 2004).

Perhaps because they help individuals without direct experience with higher education understand the relevance of the information, knowledgeable individuals appear to be an effective source of information for low-income and minority groups. Using data from a survey of Latino parents, Tornatzky and colleagues (2002) found that, after controlling for other variables including socioeconomic status and English language proficiency, actual college knowledge was higher among Latino parents who used high school counselors than among other Latino parents.

Some observers (Wimberly & Noeth, 2004) recommend that school personnel be a primary source of information for parents about student aid. Although their recommendations are based on limited analyses of the effectiveness of such initiatives, Wimberly and Noeth (2004) concluded that parents can shape students’ postsecondary planning and, through comprehensive programs, school personnel can promote effective parental involvement. They argued that the postsecondary planning process encompasses four areas: academic preparation, assessment information, college planning, and financial aid (Wimberly & Noeth, 2004). Based on their observations at two urban high schools that serve primarily low-income, minority, and first-generation college students, Wimberly and Noeth concluded that school personnel can promote parental financial aid planning by sponsoring financial aid workshops that include completion of the FAFSA form, meetings with college financial aid office representatives, reminders about deadlines for FAFSA and other state and institutional scholarship applications, and meetings with bank representatives to discuss loan processes and debt. Wimberly and Noeth also argued that school personnel can promote college planning by creating college planning materials for students and parents that identify the steps that are required to apply and enroll in college, outline postsecondary alternatives, suggest approaches for gathering information about postsecondary

options, identify characteristics to consider in a campus visit, and specify the timeline for college applications.

Nonetheless, the effectiveness of school-based interventions may differ across schools, as schools provide varying levels of resources for, and degrees of emphasis on, college-related activities. Using case study analyses of four high schools in California, McDonough (1997) found that schools structure guidance counseling functions in ways that reflect a school's assumptions about the level of college-related knowledge that students and parents have and need. For example, at a private day and boarding school, all aspects of the school were focused on college preparation and planning. An urban Catholic school had a proactive approach to college counseling, assuming that most students and parents had little knowledge and thus providing extensive college-related information to all students. In contrast, a public suburban high school in a relatively affluent neighborhood took a reactive approach, assuming that all students and parents had a basic level of college-related knowledge and thus focusing on responding to information requests. A public high school in a lower middle- to middle-income neighborhood provided minimal college guidance, largely because of a lack of resources. Differences in school orientations were manifested in part by the types of institutions that counselors encouraged students to attend. While the counselor at the urban Catholic school encouraged students to consider all types of colleges and universities including out-of-state and private institutions (even though most actually attended in-state public institutions), the counselor at the lower middle- to middle-income school urged students to attend community colleges.

High school guidance counselors are often not facilitating the flow of knowledge and information that is needed to change abstract aspirations into realistic, achievable plans. Rosenbaum (2001; Rosenbaum, Miller, & Krei, 1996) argued that most high school students report planning to attend college, but that the plans of many students are unrealistic because of their low academic performance. Based on interviews with 27 counselors in eight large high schools, Rosenbaum concludes that high school guidance counselors encourage "college-for-all," without providing sufficient information about the academic preparation and achievement that are required during high school, without providing students with information on alternatives to college, and without providing students with realistic assessments of their chances of succeeding in college. Counselors do not discourage students from expecting to attend college because they believe that a college degree is required for labor market success, they have little impact on students' college plans, present-oriented students are not receptive to advice and information that will influence their future, and parents want counselors to promote college as the favored postsecondary option (Rosenbaum, 2001; Rosenbaum, Miller, & Krei, 1996).

As a result, Hispanic and African American students may receive little college-related guidance from adults. Data from focus groups with Hispanic high school seniors suggest that, because their parents lack information about college and because the schools the students attend do not provide the necessary information, they often make college-related decisions with little adult input (Immerwahr, 2003). Other focus group data indicate that African American high school students do not enroll in college in part because neither their parents nor school officials encourage them to consider college attendance (Freeman, 1997). Teachers are often unable to provide required college-related information, at least in part, because of their focus on other

priorities, including reducing high school dropout rates and teen pregnancies (Immerwahr, 2003), and often have low expectations for African American and Hispanic student attainment (Freeman, 1997; Immerwahr, 2003).

Existing research generally focuses on the provision of college-related information to students and parents by the U.S. Department of Education, college financial aid and admissions officers, and high school personnel, with little attention to the ways in which other sources contribute to students' and parents' awareness and understanding of college prices and financial aid. In particular, little is known about the extent to which the media are a source of information or misinformation about college and financial aid, or the ways in which information or misinformation from the media influences college plans and enrollment. Some data suggest that only small percentages of individuals currently receive information about financial aid from the media. For example, one survey shows that only 8% of Latino parents of 18 to 24 year olds and 3% of Latino 18 to 24 year olds received information about financial aid from the media (Tomás Rivera Policy Institute, 2004). Tornatzky and colleagues (2002) concluded, based on their case study interviews of 41 Latino parents who had a basic level of knowledge about college, that few Latino parents perceive Spanish or English language media, including radio, television, and newspapers, to be a helpful source of information on college requirements and financial aid.

Nonetheless, the media may have the potential to become an important source of information about college prices and financial aid. Based on her review of prior research, Tobolowsky (2004) argued that television images influence viewers' beliefs about the world and understandings of appropriate behavior. In a qualitative study of 40 10th grade Latina and African American girls, Tobolowsky (2004) found that representations of "college" in prime-time television shows were related to students' perceptions of the size and climate of college campuses and classes, academic demands, dormitories, social life, and student-faculty relationships. Although the relationship between television images and actual college enrollment was not examined, televisual portrayals appeared to have a greater influence on Latinas' than African American girls' college-related expectations, regardless of their parents' level of educational attainment. Televisual images seemed to be especially important when the images conveyed information about topics not typically explored in campus visits (e.g., living in a residence hall). Latinas tended to be more persuaded by television portrayals, as well as more dependent on school-based sources of information, than African American girls. African American girls generally depended on information about the nature of the college experience that they obtained from family and friends and utilized televisual images only when the images were consistent with personal experience and/or information from family and friends (Tobolowsky, 2004).

Conclusions

The U. S. General Accounting Office (GAO, 1990) concluded, based on its review of research published in the 1980s, that students and their parents generally lack accurate knowledge and information about college prices and financial aid. Research published since 1985 shows the continued appropriateness of this conclusion.

This review and synthesis of research published since 1985 suggests that many students and their families who report expecting college attendance lack adequate knowledge and information about college prices and financial aid and that awareness and understanding are particularly low among Latino students and parents (Immerwahr, 2003; Tomás Rivera Policy Institute, 2004; Tornatzky, Cutler, & Lee, 2002), Black parents (Grodsky & Jones, 2004; Horn et al., 2003), and students and families with lower levels of parental education. The advantages of higher levels of parental education appear to include higher student educational expectations, consistency of college plans, and actual college enrollment (Hossler et al., 1999), greater knowledge of financial aid and college costs (Brouder, 1987; Horn et al., 2003; Hossler et al., 1991; Kao & Tienda, 1998; Olson & Rosenfeld, 1984; Tornatzky, Cutler, & Lee, 2002), greater parental saving for college (Horn et al., 2003; Hossler & Vesper, 1993), and greater knowledge of federal tax credits (Horn et al., 2003).

The review also suggests that awareness and understanding of college prices and financial aid are positively related to parents' expectations for their child's education (Flint, 1993), as well as a student's application to four-year college (Cabrera & La Nasa, 2000a), college enrollment (Ekstrom, 1991), enrollment in a four-year institution (Ekstrom, 1991; Plank & Jordan, 2001), and full-time rather than part-time college enrollment (Ekstrom, 1991), as well as college financing strategies (Ekstrom, 1991; Flint, 1997; Hossler & Vesper, 1993). However, much about the consistently positive relationship is not understood. Perhaps most importantly, the direction of causality has not been established. In other words, research does not identify the extent to which becoming aware of college prices and financial aid influences college-related behaviors and/or college-related behaviors cause parents and students to acquire this information and knowledge.

In terms of the effects of student aid program design, operations, and marketing activities, some observers (Advisory Committee on Student Financial Assistance, 2004a, 2004b; Kane, 1999) argue that the complexity of federal financial aid eligibility and application procedures limits the extent to which students and their families can predict the amount of financial aid that they will receive. Research suggests that both parents and students are involved in student aid application procedures (Stringer et al., 1998), but, under the existing configuration of student aid program operations and marketing activities, students and their parents are generally becoming aware of college prices and financial aid only during the last few years of high school (Horn et al., 2003; Hossler et al., 1991; Olson & Rosenfeld, 1984). Students and parents rely on a range of sources for information about college prices and financial aid (Cabrera & LaNasa, 2001; Horn et al., 2003; Hossler & Vesper, 1993). Hispanic, Black, and low-income students appear to be more dependent than other students for information from the schools they attend (Cabrera & LaNasa, 2001; Horn et al., 2003; Tomás Rivera Policy Institute, 2004; Tornatzky, Cutler, & Lee, 2002), but the schools they attend are often unable to provide the necessary guidance (Freeman, 1997; Immerwahr, 2003; McDonough, 1997; Rosenbaum, 2001).

Directions for Future Research

Although prior research consistently shows that students and their parents are poorly informed about college prices and financial aid until, at best, the latter years of high school, the implications of poor awareness and understanding for college enrollment are not well

understood. This review suggests at least four areas in which additional research is necessary. First, additional research is required to understand the ways in which awareness, understanding, and predictions of college prices and financial aid influence college aspirations, plans, and enrollment. Second, research should explore the relative receptivity of students and parents to information about college prices and financial aid. Third, research is required to understand the ways in which student aid program design, operations, and marketing influence students' and parents' awareness, understanding, and predictors of college prices and student aid. Finally, more research is needed to understand the ways in which elementary and secondary schools, as well as higher education institutions, can ensure that students and parents are knowledgeable about college prices, financial aid, and other college-related requirements and processes.

Effects of Awareness, Understanding, and Predictions of Prices and Aid

Additional research is required to understand the ways in which awareness, understanding, and predictions of college prices and financial aid influence college aspirations, plans, and enrollment. This review, like previous reviews (GAO, 1990), suggests that college enrollment rates are lower when students and their parents do not have accurate knowledge and information about college prices and financial aid. Nonetheless, as the GAO (1990) notes, the direction of causality is unclear. In other words, existing research does not identify whether high educational aspirations cause students and parents to become aware of and knowledgeable about college prices and financial aid, or, alternatively, whether awareness and understanding of college prices and financial aid cause students to recognize that college is a realistic postsecondary option and, consequently, encourage them to aspire to college enrollment and engage in other behaviors that increase the likelihood of realizing this goal.

Additional research is also required to understand differences across groups in the effects of awareness, understanding, and predictions of college prices and financial aid on college enrollment behaviors. Grodsky and Jones (2004) speculate, based on their review of descriptive data, that, because research shows that enrollment decisions of low-income and African American high school seniors are more responsive to tuition and financial aid than the enrollment decisions of other high school seniors, even a universal tendency to overestimate tuition costs may have a disproportionate negative impact on the college enrollment of low-income and African American students, if enrollment decisions are responsive to perceptions.

Latino students and parents believe that better information would promote college attendance (Tomás Rivera Policy Institute, 2004). This perspective suggests that early awareness and understanding of college prices and financial aid can raise college expectations, plans, and enrollment. But, more research is needed to understand the ways in which the timing of awareness and understanding of college prices and aid influences behaviors that promote college enrollment. Observers (e.g., Cabrera & La Nasa, 2000b; GAO, 1990) conclude that providing more information earlier in the educational pipeline will enable students and their parents to make more informed educational choices and help ensure that more students are ready to enroll in college after graduating from high school. For example, based on their review of prior research, Cabrera and LaNasa (2000b) concluded that aspiring to attend college by at least the 8th grade promotes the achievement of educational goals by making possible appropriate curricular planning and choices, endorsing high academic performance, and encouraging collection of

college cost and financial aid information. Future research, utilizing a longitudinal study, should examine changes over time in students' and parents' awareness and understanding of college prices and financial aid, changes in students' and parents' college-related behaviors, and the relationships among these changes.

Receptivity of Students and Parents to Information about College Prices and Financial Aid

Based on its review of research published during the 1980s, the GAO (1990) concluded that initiatives to increase awareness and understanding of college prices and financial aid should focus on parents of junior high school students. The GAO research review suggests that, although junior high school students have little interest in acquiring this type of information, their parents, even parents who do not report expecting their children to attend college, appear receptive to knowing more about college prices and financial aid (GAO, 1990).

This review of more recent research suggests that more needs to be known about the receptivity of different groups of both students and parents to information about college prices and financial aid, as well as the most effective ways of communicating this information to different groups. Research (Stringer et al., 1998) shows that most parents of dependent students participate in the student aid application process, suggesting that student aid program design, operations, and marketing activities should be aimed at both parents and students.

Future research, using more recent cohorts of students and parents, should also test the extent to which differences in the roles and activities of students and parents that have been identified among older cohorts persist. For example, Litten (1982) concluded that, because of differences in their parents' educational attainment, African American students were less likely than other students to involve their parents in their search activities. Moreover, compared to White students, African Americans started and ended their search processes later and conducted their searches over a longer period of time (Litten, 1982).

Research on the relative roles of students and parents in college enrollment-related processes should also recognize that the definition of "family" has changed, no longer representing only children living with two parents in the same household (Tierney, 2002; Tierney & Auerbach, in press). Older siblings and members of the extended family may be particularly important sources of knowledge, information, and other types of encouragement for minority students (Tierney & Auerbach, in press). Future research should also recognize the diversity of experiences both across and within typical categories (income, race/ethnicity, parents' education). For example, Immerwahr's (2003) exploratory study of Hispanic high school seniors illustrates heterogeneity within the "Hispanic" category in terms of national and cultural background, economic status, immigration status, and primary language and suggests that this heterogeneity contributes to differences in college enrollment-related activities and behaviors.

Effects of Student Aid Design, Operations, and Marketing

Aside from Kane's (1999) assertion that college financial aid offices "market" student financial aid programs only when they make a financial aid award to admitted students, little is known about the ways in which specific aspects of student aid design, operations, and marketing

influence students' and parents' awareness, understanding, and predictions of college prices and financial aid. Research has generally not examined specific features of student aid design, operations, and marketing but has focused on describing the sources that students and parents use to acquire information about college prices and financial aid and the ways in which sources of information vary across groups.

To raise awareness, understanding, and predictions of college prices and financial aid, more needs to be known about the effects of student aid design, operations, and marketing on students and parents. Such research should examine the ways in which students and parents learn about college prices and financial aid and the effectiveness of various types of information from particular sources. In particular, more needs to be learned about the most effective ways to increase awareness and understanding among students and families in which the parents have no college experience.

Research in this area should examine the effects of the design, operations, and marketing not only of education-related initiatives, but also of efforts in health-care, the military, and other domains. In health-care, for example, media and other campaigns have focused on increasing parental and child awareness of the dangers of drugs and on increasing parental involvement in their child's lives to reduce teen drug abuse. Lessons learned from these initiatives may inform the development of programs that are designed to increase parental and student awareness, understanding, and predictions of college costs and financial aid.

Future research in this area may also consider the ways in which parents' past financial and credit transactions influence their willingness to learn about and pursue financial aid for their children. While some research (e.g., Flint, 1997) suggests that parents who themselves used student financial aid have children who also use financial aid, additional research is required to understand the extent to which parents' prior experiences with borrowing, credit cards, and other financial transactions shape their approach to college costs and student financial aid.

Role of Elementary and Secondary Schools in Ensuring Awareness and Understanding

Based on their analyses, Plank and Jordan (2001) concluded that both families and school personnel are important sources of college-related information and guidance. But, although most parents provide encouragement for their children's postsecondary aspirations and planning, low-income parents and parents with no college experience often do not have the knowledge, information, and other resources that are necessary to adequately guide their children (Furstenberg et al., 1999; Kerbow & Bernhardt, 1993; McDonough, 1997; Tierney & Auerbach, in press; Wimberly & Noeth, 2004) and schools and other community institutions are not adequately compensating for their lower resources (Immerwahr, 2003; McDonough, 1997). Parental involvement is often limited by economic, social, psychological, and structural barriers (Hoover-Dempsey & Sandler, 1997; Horvat et al., 2003; Lareau, 1987; Stanton-Salazar, 1997; Tierney & Auerbach, in press). The types of knowledge and information that students and parents may acquire from the school is often shaped by the school's assumptions about appropriate postsecondary educational options for students, as well as the availability of resources to support college-planning (McDonough, 1997).

Future research should explore the effectiveness of school-based interventions in increasing awareness, understanding, and predictions of college prices and financial aid among different groups of students and parents. Such interventions should recognize that parent involvement alone will not guarantee a student's educational success, but that school and community support is also required (Furstenberg et al., 1999). Future research should also explore the ways in which higher education institutions can intervene to ensure that students and their parents are receiving the information and knowledge that are necessary for college aspirations, planning, and enrollment. In addition, although some (e.g., Tierney, 2002) have concluded that pre-college outreach programs typically include only superficial involvement of parents, exceptions certainly exist. Research should examine the ways in which exemplary pre-college outreach programs effectively promote parental involvement in their children's education.

Concluding Note

As Furstenberg and colleagues (1999) caution, working only to increase students' and parents' awareness and understanding of college prices, financial aid, and other college requirements will eliminate disparities in college access, choice, and degree completion only if opportunities for achieving college access, choice, and degree completion are sufficient. While Furstenberg and colleagues (1999) were particularly concerned about the ways in which inadequate educational opportunities limit the extent to which inequities across groups can be reduced even when underrepresented groups have greater resources, their caveat also applies to the adequacy of financial resources that are available to pay the costs of higher education attendance. In other words, ensuring greater awareness and understanding of college prices and financial aid among historically underrepresented groups of students will equalize postsecondary educational opportunity only if the amounts and types of federal, state, and institutional student financial aid that are available are sufficient to ensure that all students, regardless of family income, have the means to pay the costs of entering college and persisting to degree completion.

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