

Factors Influencing College Aspirations of Rural West Virginia High School Students

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In the current study, we examined factors that influence rural West Virginia high school students' college attendance decisions. Using Bronfenbrenner's ecological systems theory of human development as a theoretical basis, we studied direct and indirect influences of environmental factors upon the academic aspirations of rural Appalachian youth. Individual adolescent characteristics; family, peer, and school contexts; and broader cultural influences were all implicated in predicting rural Appalachian students' academic aspirations. In addition, interesting differences emerged in patterns of prediction for males and females. Family and peer contexts emerged as more salient predictors of college aspirations for males, while variables associated with individual academic preparation and external barriers to college attendance were most salient for females. Considerations of cultural and economic conditions fairly unique to rural Appalachia and implications of the results for educators and policymakers working with Appalachian youth are discussed.

Low college-going rates in the Appalachian region have been persistent. Lower rates of white-collar employment opportunities, poverty, and isolation have resulted in little cultural and economic change in rural areas of the Appalachian region over the past few decades. Schwarzeller and Brown (1962) once argued that schools are the best hope for change in rural and impoverished areas. For many rural Appalachian students, schools are an important link to the majority U.S. culture, providing an outside view of what needs to happen in order for change to occur. Although rates of high school graduation appear to be on the rise, completion of high school in some rural areas may still be regarded as a feat, and some students give little thought to college enrollment. High school graduation rates in West Virginia (75%) exceed the national average (68%); however, there is a large discrepancy between graduation rates in rural counties versus the more metropolitan counties. Thus, college-going rates differ substantially, ranging from 37% to 82% of students planning to go to college (West Virginia Higher Education Policy Commission, 2002). Parents and educators in many rural areas still argue about the value of physical, laboring work versus technical and professional

careers (DeYoung, 2002). The best hope for change in the region may be through the educational system.

For some communities in West Virginia, educated individuals have been able to make a difference by establishing businesses or teaching in the schools of their home towns (DeYoung, 2002). Colleges and universities in the Appalachian region have sought to increase enrollment rates, but the majority of students who wish to attend college do not enroll in the first year (Spohn, Crowther, & Lykins, 1992). The current study examines factors influencing college aspirations for rural West Virginia high school students. While rural West Virginia may not be representative of the entire Appalachian region (e.g., urban and suburban youth or youth from other Appalachian states), this study targets a population that may be at particular risk for economic, social, and cultural influences that hinder educational attainment.

An ecological systems model of human development is useful in understanding the developmental influences and educational aspirations of rural Appalachian youth (Bronfenbrenner, 1977, 1986). Bronfenbrenner proposed that human development should be studied using a contextual approach, taking into account the many possible influences of the environment upon a child. He conceptualized these influences as inter-related systems, which can impact the child directly, such as in family and school contexts, or indirectly, such as in parents' work settings and in the culture or society as a whole. West Virginia is characterized by a fairly unique set of economic and social influences (Obermiller & Maloney, 2002). Several factors specific to the

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culture, such as economic climate and family and regional influences, have an indirect impact upon the development of individuals. However, how these factors influence the decision to pursue higher education and career goals is uncertain. Bronfenbrenner's model offers a framework for examining and understanding the development of rural West Virginia youth in their sociocultural context. In the following review we summarize the general literature on direct and indirect influences on academic achievement and aspirations, and provide an analysis of sources of influence that may be unique to Appalachian culture.

Direct Sources of Influence on Academic Development

Individual psychological and biological factors, characteristics of the family environment, characteristics of the school environment, and the peer context have all been posited as important sources of direct influence for the development of academic potential. The Appalachian Access and Success study (AAS; Spohn et al., 1992), conducted in the rural Appalachian region of Ohio which borders on West Virginia, is the only study to date that has specifically examined educational aspirations of Appalachian youth. Results of the AAS study suggested that college costs weighed against the ability to make an immediate income through employment, and many seniors were uninformed about the availability of financial aid. Identified individual influences in the decision to pursue higher education included high school students' academic ability, their hopes and goals for themselves in the future, and their expectations for the future. Low self-esteem was also a factor, as many seniors saw themselves as unable to fit into the college scene, or lacking in intelligence or adequate grades for acceptance and success. Indeed, high school personnel in Appalachian Ohio felt their students were unprepared for college, both academically and in their expectations for college life.

Family factors that have been identified as influences in the decision to enroll in higher education include the family as a resource provider, family members as role models, and family as a source of encouragement for higher education. Parents' education and parental expectations have emerged as major factors in the college decision-making process (Conklin & Dailey, 1981; Murphy, 1981). Stage and Hossler (1989) reported that father and mother educational achievement, as well as family income, are important factors affecting parents' educational expectations for their children. The AAS study (Spohn et al., 1992) revealed that level of parental educational attainment was a factor that influenced whether students could navigate the college application process and whether they witnessed firsthand the benefits of higher education. Similarly, siblings' college attendance influenced enrollment, because older siblings are often role models for their younger brothers and sisters. Low family income and the family's inability to help finance higher edu-

cation emerged as inhibiting factors. High school personnel in Appalachia perceived a lack of parental encouragement for students to attend college.

Many studies have looked at the interaction between family and school and the influences of these two systems on child development (see Bronfenbrenner, 1986). For example, Epstein (1983a, 1983b) examined the impacts of home and classroom environments on academic achievement and attitudes toward school in a sample of students transitioning from middle school to high school. Home and classroom environments impacted adolescent development through provision of opportunities for communication and decision making. Students with more opportunities in these areas demonstrated more motivation, independence, and eventually higher grades in high school. Family influences were found to be stronger in the developmental process than classroom influences. However, school influences were more important to children who were not permitted such opportunities at home. These effects were more substantial than those produced by socioeconomic status or ethnicity (Epstein, 1983b).

The school setting also has a unique, direct impact on academic motivation. School Belonging, or the sense that a student feels "personally accepted, respected, included, and supported by others—especially teachers and other adults in the school social environment" (Goodenow & Grady, 1993, p. 61), contributes largely to academic motivation. In a study conducted with urban youth, Goodenow and Grady found that "school belonging was significantly associated with several motivation-related measures—expectancy of success, valuing schoolwork, general school motivation, and self-reported effort" (p. 60). The effects of School Belonging on motivation were different for different groups. Females' responses on measures of school belonging were more strongly correlated with academic success than were males' and Hispanic students were more likely to be affected by school belonging than African American students. Factors influencing school belonging and the association between school belonging and achievement may be different for rural youth, rendering this an important research topic.

Finally, values of peers tend to influence the motivation and achievement of adolescents. Goodenow and Grady (1993) discussed the ecological nature of motivation to achieve by noting that academic motivation develops from personal values and attributes and influences from close others, culture and ethnicity, and society as a whole. The influence of peers in the school setting has been documented widely (e.g., Brown, 1990; Steinberg, Dornbusch, & Brown, 1992) and adolescence is the developmental period in which individuals are most influenced by their peers (Goodenow & Grady, 1993). Peers influence academic achievement in positive and negative ways, and for many students of lower socioeconomic status, academic success may be viewed contemptuously (Phelan, Davidson, & Cao, 1991).

Indirect Sources on Influence on Academic Development

Regional isolation sometimes prevents accessibility of information and assistance. The AAS study, conducted in rural Appalachian Ohio, reported on institutional factors acting as barriers to the attainment of higher education. These factors impacted students through their school personnel and were primarily related to the lack of information available to high school counselors, and, as a result, lack of college information available to students. High school personnel found it difficult to obtain and maintain access to admission requirements and financial aid information for various colleges.

Of particular interest is the effect of poverty on all levels of the ecological system. Socioeconomic status and availability of resources greatly impact the decision-making processes of students (Freeman, 1999; Spohn et al., 1992). Bronfenbrenner (1986) documented the many areas of research that discuss the impact of economics on child development. Finances affect children in the home, in their interactions with family members, at school, and in their neighborhood play area. Elder, Nguyen, and Caspi (1985) explained:

To understand the impact of economic hardship on children's lives requires the knowledge of the adaptations chosen and played out by their parents. The adverse effects of stressful economic times are not necessarily exercised directly. They may be produced indirectly through their disorganizing effects on family relations. (p. 362)

Socioeconomic status can dictate educational choices (i.e., which school children attend), determine the availability of certain peers, limit or permit access to health services, and influence a host of other social contexts (e.g., church, daycare, recreational activities, etc.). On a broader level, family income also impacts the choice of parents' friends, neighbors, coworkers, and the availability of media, legal services, and social services. Entire cultures or subcultures are influenced by economics in the expectations and accepted standards of living that are made available to members.

Influences Specific to the Appalachian Region

In order to understand the cultural influences of Appalachia, it is important to outline characteristics of the region. The Appalachian Regional Commission (2002) defined the region as including all of West Virginia and parts of 12 other states, stretching along the Appalachian Mountain Range, from New York to Mississippi. Like most regions of the United States, the Appalachian region has become increasingly diverse, with culturally and ethnically diverse urban centers developing in every state of the region. However,

much of Appalachia, particularly West Virginia, remains largely rural. Rural Appalachia is predominately inhabited by White individuals (93%), although there are people of other cultures and ethnicities in the area. Many Appalachians are of Scotch-Irish decent, with generations of ancestors who inhabited the isolated mountainous regions, building a somewhat unique culture (Klein, 1995).

The Appalachian region has been repeatedly identified as an economically disadvantaged area for many reasons (Obermiller & Maloney, 2002). Family and per capita incomes are significantly lower than those reported for the United States as a whole. Higher unemployment rates and concentration of poverty in the Appalachian region have resulted from job losses in the well-paid mining and manufacturing industries. Subsequently, higher rates of dependency on federal and state supplemental income have followed. In addition, the rates of college attendance in this area are lower than the national average. Bickel (1989) reported that less than one third of West Virginia high school graduates enrolled in 2-year and 4-year colleges and universities. Lower high school completion rates, and thus college attendance rates, were related to perceived irrelevance of educational attainment to economic circumstance. In the fall of 1991, 80% of high school seniors surveyed in Ohio Appalachia stated they wanted to go to college. However, only about one third of high school seniors in the region are likely to enroll in college after graduation, significantly fewer than the general U.S. population (Spohn et al., 1992).

Some researchers (Keefe, 1992; Keefe, Reck, & Reck, 1983) have asserted that Appalachian culture has developed into a unique ethnicity, whereas others argue that the struggles of Appalachian people are not qualitatively different from "other disprivileged groups in American society" (Batteau, 1979-1980, p. 29). Keefe and colleagues were primarily referencing western North Carolina inhabitants; while their conclusions regarding the uniqueness of Appalachian culture and lifestyle are relevant to the current study, their sample may not be representative of all of Appalachia. Batteau noted that the boundaries of Appalachia change and are defined fluidly for political, anthropological, or economic reasons. Thus, while it has been argued by some that the inhabitants of Appalachia do not differ dramatically from other poor subcultures in America, further assessment of the role of culture in understanding development across Appalachia is warranted.

Descriptions of people from the Appalachian region often perpetuate negative stereotypes and discrimination. Klein (1995) described how such stereotypes might be internalized by the Appalachian people and serve to maintain distance between these individuals and career and educational opportunities. This study was conducted with urban Appalachian migrants and its relevance for rural West Virginia youth should be assessed. However, one might argue that cultural stereotypes and isolation from

modern, mainstream American culture would be even more severe for rural Appalachians. Appalachians are often stereotyped as “hillbillies,” destined to be undereducated and often unemployed. Given such a stereotype, families in the region may feel more distant from the general American community and strive to preserve an isolated life style for fear of rejection. Such isolation only perpetuates the cycle of economic and educational deprivation, exacerbated by this self-fulfilling prophecy. Often, such marginalization is the result of misunderstandings between Appalachian individuals and individuals from the larger American culture (Batteau, 1979-1980).

Although differences within the region are apparent, the ecological systems of the Appalachian region are primarily influenced by the interaction of two major factors specific to the area: “(a) the social-cultural influences of urban America and (b) the lingering aspects of rural folk culture” (The Rural & Appalachian Youth & Families Consortium, 1996, p. 387). Three factors continually surface as characteristics somewhat unique to Appalachian culture: Localism, historicism, and familism. Localism is characterized by a sense of belonging, or being a part of the land. Appalachian families tend to maintain a commitment to the place in which they live or where they grew up. This concept is supported by the fact that a large number of individuals from the region continue to live in the area, work in the area, and raise families of their own. Historicism refers to the sense or understanding of one’s place in history, within the family and region where one developed. Such devotion to place and time is further accented by one’s sense of family. A strong commitment and reliance upon family of origin defines the concept of familism. Individuals in Appalachia tend to maintain close family ties, in both geographic proximity and interpersonal relations.

Gender roles characteristic of rural regions are present and persistent in rural Appalachia. Traditional gender-related activities, such as mothering and housekeeping, have been supported by the minimal presence of job opportunities for women and the absence of professional career women in the area. Additionally, the culture of poverty tends to oppress women in this manner, given the limited resources available. Many times, women care solely for children, while husbands are away, in other regions working, or absent from the home completely (Oberhauser, 1995). Females are brought up in this atmosphere, often with only motherhood to look forward to. Murry (1992) noted that adolescent pregnancy is sometimes celebrated because motherhood is the only viable goal for many females. Similarly, Williams (1991) concluded that most teenage mothers live in poverty conditions already and were likely brought up in that atmosphere; “thus it is unlikely that they see having a baby as leading to negative economic consequences” (p. 33). Economic necessity may have changed rates of employment for Appalachian women over the past few decades, with more women working outside the home. However, professional career opportuni-

ties remain scarce and many women are employed in low paying service occupations. While this may provide young Appalachian women with alternative role models to home-making, these employment opportunities offer little with regard to professional development and economic security (Oberhauser, 1995; Peterson & Peters, 1985).

The Appalachian culture and its fairly unique ecological system are likely to impact the students’ decisions to pursue higher education. In the present study, influences at all levels of the ecological systems, including individual adolescent characteristics, socioeconomic factors, parental influence and educational attainment, peer and family influence, and larger cultural values, were hypothesized to impact the decision to enroll (or not to enroll) in college.

Method

Participants

The target population for the study was high school seniors in West Virginia. Two hundred forty-two seniors (115 males, 127 females) in the most rural counties of West Virginia (populations under 12,000 in each county) participated based on their schools’ agreement to collaborate with the researchers. The first author contacted school principals by telephone and invited them to participate in the study. Principals who were willing to commit time and resources for completion of the questionnaire agreed to participate. Out of 13 principals contacted, 5 agreed to participate. Lack of time available in the class schedule for administration of the questionnaire was the most common reason given by principals who declined to participate. All seniors enrolled in the participating schools (434 students) were eligible to participate. Student participants completed the surveys on a voluntary basis, resulting in a 56% response rate. Mean age of participants was 17.86; those under the age of 18 may have been excluded from participation if their parents objected to their involvement in the study. The majority of these students were White (96.7%), with a small percentage of participants from other racial and ethnic groups.

Procedure

The first author e-mailed, faxed, or mailed questionnaires to school principals who agreed to take part in the study. A letter containing information about the study was sent home with seniors approximately one week before data collection took place. The letter instructed parents to contact school personnel if they did not wish their child to participate in the study or to simply direct their child not to complete the survey. Students from two schools completed the survey about a week before graduation, while students from the remaining three schools completed the survey in the first month of their senior year. All participants com-

pleted the anonymous questionnaires in their classrooms, administered by teachers or administrative assistants. Upon completion of the questionnaires, students placed them in an envelope, which was then collected by school staff and mailed to the first author.

Measure

Items on the questionnaire assessed general demographic information, whether students planned to attend college the following year (4-year, 2-year, community college, military, technical school, etc.), peer, family, and financial factors hypothesized to be associated with the college decision, and academic achievement and planning as represented by GPA and college preparation courses.

We assessed school belonging via eight items either adapted from the National Longitudinal Study of Adolescent Health (Add Health; Udry, 1998) school belonging scale or developed for this study. Sample items include "I feel close to people at this school," "I am happy to be at this school," and "I enjoy learning." Participants responded on a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). A principal components analysis with varimax rotation assessed internal consistency of the eight items. Five of the items loaded on the School Belonging factor (eigenvalue = 2.87, 35.91% variance; $\alpha = .78$), while the remaining three items loaded on the School Comfort factor (eigenvalue = 2.13, 26.63% variance, $\alpha = .73$).

Students who were planning to attend a community college, 4-year college or university, or a military academy within the first year or two after high school completed 10 items asking about reasons for attending college. A principal components analysis with varimax rotation yielded three factors describing students' reasons for attending college. Four items loaded on the Self-improvement factor (e.g., to become a more cultured and educated person; eigenvalue = 2.38, 23.82% variance, $\alpha = .73$), three items loaded on the Money/Status factor (e.g., to make more money; to get a better job; eigenvalue = 2.25, 22.46% variance, $\alpha = .67$), and three items loaded on the External/Escape factor (e.g., want to get away from home; eigenvalue = 1.69, 16.85% variance; $\alpha = .58$).

Finally, students who were not planning to attend community college, 4-year college or university, or a military academy within the first year or two after high school completed 10 items asking about reasons for not attending college. Students who were planning to attend a vocational school or enlist in the military were included in this group. A principal components analysis with varimax rotation yielded three major components. Six items loaded on the Dismissive factor (e.g., will make enough money without college; eigenvalue = 3.83, 38.25% variance; $\alpha = .89$), two items loaded on the Barriers factor (can't afford it; eigenvalue = 1.87, 18.69% variance; $\alpha = .65$), and two items loaded on

the Localism factor (e.g., want to live at home; eigenvalue = 1.33, 13.26% variance; $\alpha = .47$). Scales comprised of fewer items yielded lower reliability estimates.

Results

Of the students surveyed, 69% planned to go to college within the first year or two of graduation. We tested two groups of hypotheses using chi-square analyses, analysis of variance, and logistic regression. First, we considered the associations among individual characteristics or aspects of the immediate environment and students' college aspirations. Second, we examined indirect influences (many of which reflect Appalachian culture) in the decision to pursue college. In addition, we descriptively examined information about students' reasons for attending or not attending college and problems encountered in the college attendance decision.

Direct Influences on Academic Aspirations

Contrary to expectations, there were no significant differences between males and females in their intention to go to college; 74.6% ($n = 94$) of females and 63.3% ($n = 69$) of males indicated that they planned to go to college.

Table 1 provides a summary of chi-square analyses examining the influences of individual, family, school, and peer influences on the college decision. As expected, individual academic variables were strongly related to the decision to attend college. Chi-square analyses revealed strong relationships in the predicted directions between college plans and (a) ultimate educational goals, (b) high school curriculum, (c) perceptions of preparedness, and (d) perceived intelligence. Thus, it appears that most students planning to attend college held the perception that they had taken the necessary steps to prepare for higher education.

In examining the influence of peers on students' college decisions, we tested the relationship between the primary friend's plans to attend college and the student's plans to attend college separately for males and females using chi-square analyses. A strong relationship emerged for males, but not females. Males who were not planning to go to college were less likely than those who were planning to go to college to report that their primary friend was going to college. Most females, however, reported that their friends were planning to go to college, regardless of their own plans.

We asked students to compare their family's income with the income of other families in the area. There was no significant association between perceptions of relative income and college attendance plans. The majority of all students responded "same as others," regardless of college plans. Additionally, we found no significant relationships between siblings' college attendance and students' plans to attend college for males or females.

Table 1
Summary of Results Examining Direct Influences on College Attendance Decision

Influences		College Bound				
		Yes		No		
		<i>n</i>	%	<i>n</i>	%	
Educational goals ^a	HS diploma/GED	0	0.0	26	38.8	
	Vocational/job training	1	0.6	20	29.9	
	2-year degree	22	13.6	8	11.9	
	4-year degree	65	40.1	7	10.4	
	Graduate degree	74	45.7	6	9.0	
High school curriculum ^b	College Prep	97	60.6	11	15.9	
	General	57	35.6	40	58.0	
	Vocational	4	2.5	17	24.6	
	Other	2	1.3	1	1.4	
Prepared for college ^c	Yes	96	59.6	22	31.0	
	No	10	6.2	20	28.2	
	Unsure	55	34.2	29	40.8	
Perceived intelligence ^d	Below average	2	1.3	5	7.1	
	Average	99	61.9	54	77.1	
	Above average	59	36.9	11	15.7	
Primary friend planning to attend college	Boys ^e	Yes	55	96.5	10	66.7
		No	2	3.5	5	33.3
	Girls	Yes	78	90.7	19	86.4
		No	8	9.3	3	13.6
Family income	Less than others	34	21.3	18	26.9	
	Same as others	93	58.1	43	64.2	
	More than others	33	20.6	6	9.0	
Siblings	Attend college	54	33.5	20	28.6	
	Not attend college	107	66.5	50	71.4	

^a $\chi^2(4, n = 229) = 138.71, p < .001$. ^b $\chi^2(3, n = 229) = 51.87, p < .001$. ^c $\chi^2(2, n = 232) = 26.93, p < .001$. ^d $\chi^2(2, n = 230) = 14.43, p < .01$. ^e $\chi^2(1, n = 72) = 12.04, p < .01$.

Table 2 displays means and standard deviations for continuous school achievement and attitude variables. Data are presented separately for males and females planning to go to college and not planning to go to college. We performed a series of 2 x 2 analyses of variance using sex and college aspirations as independent variables and continuous school achievement and attitude variables as dependent variables. We found significant differences between males and females in mean GPA, with females demonstrating higher averages. Also, students planning to attend college had higher GPAs, $F(1, 205) = 36.10, p < .001$. We did not find a significant

interaction between sex and college aspirations. With regard to School Belonging, a main effect for sex indicated that males were higher on this factor than females, but School Belonging was not associated with plans to attend college. We did not find an interaction effect between sex and college plans. With regard to School Comfort, a main effect emerged for college aspirations, $F(1, 222) = 22.43, p < .001$, but there were no differences between males' and females' reports of comfort in the school setting and no significant interaction between sex and college aspirations.

Table 2
Means and Standard Deviation for Continuous School Variables

			College Bound					
			Yes			No		
			<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
School influences								
GPA	Boys		63	3.32	0.51	31	2.86	0.62
	Girls ^a		87	3.51	0.41	28	3.03	0.62
School	School Belonging	Boys ^b	67	3.60	0.75	34	3.44	0.81
		Girls	94	3.28	0.84	31	3.16	0.73
	School Comfort	Boys	67	3.97	0.61	34	3.43	1.06
		Girls	94	3.91	0.64	31	3.44	0.76

^a $F(1, 205) = 5.44, p < .05$. ^b $F(1, 222) = 6.54, p < .05$.

Indirect Influences on Academic Aspirations

Influences associated with family. Table 3 presents a summary of chi-square analyses examining indirect influences associated with family. Different patterns of association emerged for females and males in the relationship between parents' education and students' college aspirations. Chi-square analyses revealed a strong relationship between mothers' college attendance and males' plans to attend college. An even stronger relationship emerged between fathers' college attendance and males' plans to attend college. When both parents had attended college, however, a strong relationship emerged for both males and females.

We also found a strong relationship between fathers' occupations and the decision to pursue college. A greater proportion of students planning to go to college reported that their fathers were employed in professional occupations, while the majority of those not planning to go to college reported that their fathers were unemployed, unskilled, or semiskilled. Finally, the family's social class, represented by the Hollingshead Index of Social Position (ISP; Hollingshead & Redlich, 1958), was associated with males' plans to attend college, but not females'. Lower SES was associated with males not attending college.

Influences specific to Appalachia. Table 4 presents the results of chi-square analyses examining items related to Appalachian culture. As an indirect assessment of familism in shaping students' college plans, we examined the impact of extended family members' college attendance on students' choices. Extended family members' college attendance was highly associated with students' plans to attend college. Aunts' and uncles' college attendances were strongly associated with students' college plans; cousins' attendance was significant to a lesser degree. Because the large majority of all students'

grandparents had not attended college, we found no relationship between this variable and the college decision. Finally, collapsing across extended family members, if any extended family member had attended college, students were more likely to report plans to attend themselves.

There were no significant differences between males and females with respect to Localism, and these responses had no significant relationship with college plans for either sex.

To assess historicism, we asked students to report on their "roots" in West Virginia, by stating whether they themselves, their mothers, and their fathers were originally from West Virginia. The overwhelming majority of students reported that they and both of their parents were from West Virginia. Because 80-90% of all students (both those planning to attend college and those not planning to attend college) reported strong Appalachian roots, the role of historicism in the college decision process was difficult to assess.

Multivariate Assessment of Factors Associated with College Aspirations

We performed stepwise logistic regression analyses to determine which combination of variables was most predictive of college plans for attendance for males and females separately. Based on the results of the univariate analyses, we entered 11 variables for each sex: perceived intelligence, preparedness for college, high school curriculum, GPA, School Comfort, School Belonging, primary friend's plans to attend college, father's occupational level, either parent's college attendance, extended family college attendance, and Family Index of Social Position.

Table 3
Indirect Parent Influences

				College Bound			
				Yes		No	
Parent influences				<i>n</i>	%	<i>n</i>	%
Parents' education	Males	Mother attended college ^a	Yes	22	62.9	4	25.0
			No	13	37.1	12	75.0
		Father attended college ^b	Yes	23	69.7	3	20.0
			No	10	30.3	12	80.0
		Both parents attended college ^c	Yes	16	51.6	2	14.3
			No	15	48.4	12	85.7
	Females	Mother attended college	Yes	26	49.1	4	26.7
			No	27	50.9	11	73.3
		Father attended college	Yes	16	34.0	1	10.0
			No	31	66.0	9	90.0
Both parents attended college ^d		Yes	13	27.0	0	0.0	
		No	34	72.3	11	100.0	
Parents' occupation	Mother	Professional	54	38.6	13	24.5	
		Clerical, sales, tech., skilled	31	22.1	10	18.9	
		Semiskilled, unskilled, unemployed	55	39.3	30	56.6	
	Father ^e	Professional	39	31.0	5	10.4	
		Clerical, sales, tech., skilled	37	29.4	13	27.1	
		Semiskilled, unskilled, unemployed	50	39.7	30	62.5	
Family Index of Social Position	Males ^f	Upper	5	9.4	0	0.0	
		Upper-middle	7	13.2	0	0.0	
		Middle	18	34.0	6	21.4	
		Lower-middle	18	34.0	17	60.7	
		Lower	5	9.4	5	17.9	
	Females	Upper	4	6.1	0	0.0	
		Upper-middle	9	13.6	0	0.0	
		Middle	20	30.3	6	27.3	
		Lower-middle	24	36.4	9	40.9	
		Lower	9	13.6	7	31.8	

^a $\chi^2(1, n = 51) = 6.30, p < .05$. ^b $\chi^2(1, n = 48) = 10.26, p < .01$. ^c $\chi^2(1, n = 45) = 5.56, p < .05$. ^d $\chi^2(1, n = 58) = 3.92, p < .05$. ^e $\chi^2(2, n = 174) = 9.80, p < .01$. ^f $\chi^2(4, n = 81) = 11.40, p < .05$.

For males, the stepwise procedures entered three predictor variables into the model: males' perceived intelligence compared to others, primary friend's plan for college, and either parent college attendance. The final model accounted for 30% of the variance in the college plans ($R^2 = .30$) and resulted in a 93.5% correct classification ($\chi^2 [4, n = 46] = 16.62, p < .01$).

A different pattern emerged as significant predictor variables for females. Stepwise procedures entered two variables into the equation: high school curriculum and perceived intelligence compared to others. The final model accounted for 31% of the variance ($R^2 = .31$) and resulted in a 77.9% correct classification ($\chi^2 [4, n = 68] = 25.63, p < .01$).

Table 4
Indirect Influences: Appalachian Culture

			College Bound				
			Yes		No		
			<i>n</i>	%	<i>n</i>	%	
Family college attendance (Familism)	Aunts attended ^a	Yes	82	53.2	12	19.0	
		No	72	46.8	51	81.0	
	Uncles attended ^b	Yes	73	47.1	12	19.0	
		No	82	52.9	51	81.0	
	Cousins attended ^c	Yes	118	75.6	34	54.0	
		No	38	24.4	29	46.0	
	Grandparents attended	Yes	26	16.9	6	9.5	
		No	128	83.1	57	90.5	
Any extended family attended ^d	Yes	135	86.5	46	73.0		
	No	21	13.5	17	27.0		
Localism	Males	Want to live here for next 30 years	Yes	15	21.7	8	20.0
		No	20	29.0	19	47.5	
		Unsure	34	49.3	13	32.5	
	Females	Want to live here for next 30 years	Yes	20	21.3	10	31.3
		No	26	27.7	6	18.8	
		Unsure	48	51.1	16	50.0	
Appalachian origins (Historicism)	Student from West Virginia	Yes	148	91.9	61	89.7	
		No	13	8.1	7	10.3	
	Mother from West Virginia	Yes	137	86.7	58	89.2	
		No	21	13.3	7	10.8	
	Father from West Virginia	Yes	139	88.5	55	84.6	
		No	18	11.5	10	15.4	
Both parents from West Virginia	Yes	127	81.4	50	79.4		
	No	29	18.6	13	20.6		

^a $\chi^2(1, n = 217) = 21.30, p < .001$. ^b $\chi^2(1, n = 218) = 14.82, p < .001$. ^c $\chi^2(1, n = 219) = 9.93, p < .01$. ^d $\chi^2(1, n = 219) = 5.72, p < .05$.

Other Factors in the College Decision-Making Process

Reasons for attending and not attending college. To explore relationships between sex and reasons for attending and not attending college, we conducted two 2 x 3 analyses of variance with one between subjects factor (sex) and one within subjects factor (the three factors derived from questions about reasons for attending or not attending college). Table 5 displays means and standard deviations for males and females on each of the factors. The "Reasons for Going to College" measure comprised three factors: Self-improvement, Money/Status, and External/Escape. We detected no main effect for sex, and no interaction between sex and the three factors. However, there were significant differences between the three factors of this measure, $F(2, 160) = 266.30,$

$p < .001$. Students were highest on Money/Status and lowest on External/Escape.

The "Reasons for Not Going to College" measure also comprised three factors: Dismissive, Barriers, and Localism. An interaction effect between sex and the three factors approached significance, $F(2, 59) = 2.99, p = .054$ and may be interpreted cautiously. Males were higher on Dismissive and Localism when compared to females, whereas females were higher on Barriers. Thus, males were more likely to dismiss college as an option or endorse wishes to stay close to home if they were not planning to attend college. Females, on the other hand, were more likely to cite barriers to college attendance if they were not planning to attend college. Again, there were significant differences in the overall means of the three scales in the measure, $F(2,$

Table 5
Reasons for Going and Not Going to College

	Males			Females		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Reasons to go to college						
Self-improvement	71	3.79	0.80	92	3.88	0.61
Money/Status	71	4.24	0.80	92	4.46	0.54
External/Escape	71	2.75	0.90	92	2.68	0.87
Reasons not to go to college						
Dismissive	34	3.39	0.87	28	2.99	0.91
Barriers	34	2.81	1.05	28	3.13	1.16
Localism	34	2.34	1.11	28	2.21	0.82

59) = 21.058, $p < .001$. Means on Dismissive were highest, and means on Localism were lowest.

Problems encountered in the college decision process.

Table 6 presents a summary of the frequency with which students endorsed confronting various problems associated with the college decision. These problems resulted from direct and indirect environments; some were associated with the students' parents, some were individual characteristics, and some were associated with regional barriers (e.g., lack of information and limited access to resources). Students listed "lack of financial resources" as the top problem encountered in the college decision process, followed by "lack of information regarding college." "Lack of information" was found to have a significant relationship with the college decision. "Lack of information regarding financial aid" was third most reported. We found one other item, "don't like school," to have a significant relationship with the college decision. Students who were not going to college were more likely to endorse this item.

Discussion

Our examination of factors contributing to the college aspirations of rural West Virginia youth revealed a range of direct and indirect influences on high school seniors' college plans. Consistent with hypotheses based on Bronfenbrenner's ecological systems model (Bronfenbrenner, 1977; 1986), a contextual approach to understanding academic development in rural Appalachian students yielded a richer and more complex understanding of the decisions these adolescents made for their futures. Individual adolescent characteristics, features of the family, peer, and school environments, and broader cultural influences were all implicated in the choices made by West Virginia students.

The most consistently salient factors in predicting college decision making were those related to academic preparation. Objective measures, such as students' grade

point averages and whether they had engaged in a college preparatory curriculum in high school were strongly associated with college plans. In addition, more subjective measures, such as students' perceptions of their own intelligence, preparedness for college, and comfort in the school setting, were also highly associated with college plans. In this respect, Appalachian students may not be markedly different from the general population of high school students. College preparatory curriculum, higher grade point averages (GPAs), higher achievement/standardized test scores, and advanced educational goals are generally predictive of college attendance (Ganderton & Santos, 1995; King, 1996; Otto, 1986; Stage & Hossler, 1989; Thomas, 1998). Students who are college bound appear to plan for and prepare for college beginning quite early in their academic careers. It may be that some students are "groomed" for college from the earliest years, by school personnel and others. Early academic achievements facilitate both objective (e.g., GPA) and subjective (e.g., perceiving oneself as intelligent) measures of success, which in turn garners attention from adults and opens doors for future academic possibilities.

Parent variables were also very important in predicting college aspirations for rural Appalachian youth. Parents' education levels were particularly salient in predicting college decisions, especially for young men. This finding is consistent with the hypothesis that parents who have attended college are better able to model and facilitate the transition to higher education. Further, more highly educated parents may place a greater emphasis on education and instill in their children the belief that a college education is necessary and important.

In addition, fathers' occupational status was associated with adolescents' college decisions. Those whose fathers were engaged in professional occupations were more likely to plan for college. The particular salience of fathers' occupations, relative to mothers' occupations, is noteworthy. The role of parent occupation in predicting adolescent col-

Table 6
Most Frequently Encountered Problems Regarding Attending College

Problems encountered		College Bound			
		Yes		No	
		<i>n</i>	%	<i>n</i>	%
Encountered any problems re: college	Yes	91	56.2	33	46.5
	No	71	43.8	38	53.5
Can't afford it/lack of finances	Yes	48	29.4	19	26.4
	No	115	70.6	53	73.6
Lack of information re: college ^a	Yes	45	27.6	8	11.1
	No	118	72.4	64	88.9
Lack of financial aid info	Yes	38	23.3	11	15.3
	No	125	76.7	61	84.7
Don't like school ^b	Yes	18	11.0	17	23.6
	No	145	89.0	55	76.4
Want immediate income	Yes	18	11.0	14	19.4
	No	145	89.0	58	80.6
Not smart enough	Yes	16	9.8	9	12.5
	No	147	90.2	63	87.5
Live too far from a college	Yes	12	7.4	7	9.7
	No	151	92.6	65	90.3
Poor grades in school	Yes	10	6.1	9	12.5
	No	153	93.9	63	87.5
No friends planning to go to college	Yes	7	4.3	3	4.2
	No	156	95.7	69	95.8
Lack of parent support	Yes	8	4.9	2	2.8
	No	155	95.1	70	97.2
Won't fit in at college	Yes	9	5.5	0	0.0
	No	154	94.5	72	100.0

Note. The frequencies listed for specific problems apply only to the students who replied that they had encountered some problems during the college process. Problems are listed in order of frequency of endorsement.

^a $\chi^2(1, n = 235) = 7.78, p < .01$. ^b $\chi^2(1, n = 235) = 6.22, p < .05$.

lege aspirations is predicated on the assumption that parents who are engaged in lower paying, lower status professions (unskilled or semiskilled) or who are unemployed provide models for their children that do not facilitate or encourage higher education. However, almost half of the mothers in

the unskilled/semiskilled/unemployed category were listed as homemakers. While these mothers may not have been providing models for the attainment of higher education, they were also not likely providing models for less skilled or less educated occupations. It appears that the absence of

a large portion of mothers from the working class may have rendered fathers' occupations more influential.

For several sources of influence in the college decision, interesting sex differences emerged. Although there were no significant differences between males and females in their aspirations regarding college, the two sexes appeared to arrive at the decision to attend college via different pathways. For example, the influence of parents' education and peers' college plans was more salient for males, suggesting that males were more influenced by family and peers in their decisions regarding college. In contrast, the variables that emerged as most important for females, high school curriculum and perceived intelligence relative to peers, had more to do with individual preparedness for college. Additionally, family socioeconomic status impacted aspirations for males and not females. Young men from upper and upper-middle class families were much more likely to plan for college, while males from lower-middle and lower class families were much less likely to intend to go to college. There was a similar, but nonsignificant trend for females. Finally, sex differences in the reasons that students endorsed for not going to college suggested that males were more likely to choose not to go to college because they thought it wasn't important or because they wanted to stay in their home community, while barriers to attending college (e.g., "can't afford it"; "not smart enough") were more important in females' reasons for not attending college.

Taken together, the sex differences in predictors of college aspirations may be reflective of cultural and economic conditions in rural Appalachia. Since there are a number of labor-intensive employment opportunities with coal, timber, and manufacturing industries, males may see employment after high school as a viable option; one that could yield an adequate income. However, these opportunities are often not available to females, who may envision their options as getting married and having a family, working at a minimum wage service job, or going to college. For females, college may be viewed as the only option for obtaining financial security and independence; an option that can be denied by limitations in one's ability or external forces.

Further, the more striking influence of family and peer factors on males' college decisions suggests the possibility of marked subcultural influences on the decisions of young men. Males who are groomed for higher education may be socialized in more educated, professional, and affluent family contexts, which impact the development of peer networks, as well as career goals. In contrast, males socialized in "working class" homes and neighborhoods, which are more prevalent in rural Appalachia, may learn to value labor over education and may develop more dismissive or disparaging attitudes toward higher education (Wallace & Deikroger, 2000). This phenomenon may not be salient for females, whose working class opportunities may be more limited and for whom college may be viewed as a "way

out." Interestingly, although it was not related to college aspirations, males also demonstrated a greater sense of school belonging compared to females. However, greater school belonging in young rural men may not necessarily be a reflection of greater investment in academic attainment and the educational process. DeYoung (1995) discussed the emphasis on athletics and other nonacademic motivations for young men in rural America to attend school, which may not translate to a greater likelihood of pursuing post-secondary education.

Our efforts to directly examine the impact of three characteristics considered central to Appalachian culture—familism, localism, and historicism—yielded mixed results. We observed indirect support for the impact of familism on adolescents' decisions, as evidenced by the strong associations between extended family members' education levels and students' aspirations. However, our data do not provide support for the hypothesis that students who endorsed our measure of localism, or the desire to remain close to their home town throughout life, were less likely to aspire to college. Almost half of the students reported that they were unsure about whether they intended to remain close to their homes. This uncertainty may reflect the impact of the ever-increasing mobility of the larger U.S. society on Appalachian culture. Finally, we were unable to adequately address hypotheses related to historicism, as there were so few students who did not report strong Appalachian roots. Future work in this area will need to use more complex, multidimensional methods for assessing the impact of culture. For example, a qualitative analysis of students' endorsement of Appalachian cultural ideals might shed further light on the impact of Appalachian culture on students' goals and priorities.

Finally, students were asked to report on reasons for their college attendance decisions and problems encountered in the college decision process. It is important to note that the measures used to assess students' reasoning about college were developed for this study; several scales included few items and, thus, reliability estimates for some of the scales were low. For this reason, these findings are considered preliminary and should be viewed as an initial step toward understanding the college decision process for West Virginia youth. The development of more sophisticated measures of the decision making process, with specific attention to psychometric standards, is important. Nonetheless, the information provided by the current study is a valuable resource for parents, educators, and administrators interested in improving the college attendance rates in their communities. The summary of students' reasons for choosing not to attend college suggests that different intervention strategies may be appropriate for males and females, such that females may benefit most from direct assistance and support in the college preparation, application, and financial aid process, while some males may benefit more from interventions aimed at increasing interest and investment in higher educa-

tion. Additionally, students listed lack of information about college and lack of financial resources and information about financial aid as the most important problems encountered in the college decision process. Given the previously reported findings (Spohn et al., 1992) that high school counselors viewed students as uninformed and unprepared for college and lacked college information themselves, these findings suggest that the development of innovative strategies for disseminating information about college opportunities, particularly funding opportunities, should be a priority for educators and policymakers.

Limitations and Summary

Although this study yielded several important pieces of information about the educational development of rural West Virginia youth, there were several limitations. The present study evaluated students' intentions to attend college. As such, we have no knowledge of actual attendance rates and, more importantly, success rates for our participants. Approximately 69% of the students in this study reported that they planned to attend college. However, according to the AAS study (Spohn et al., 1992), it is likely that only about one third of students will actually attend college within the first two years after high school. Additionally, many students who enter college do not succeed. Examination of factors associated with actual college attendance and college success via longitudinal methodology is necessary to further elucidate patterns of prediction. Also, it is important to note that college is not the best career preparation option for many students. In fact, students who are not at the top of their class, the "academic middle" (Gray & Herr, 1995, p. 3), may profit more from a technical education than a college education. This study was initiated in hopes of better understanding the influences in the college decision process per se, so that students who may be good candidates for college are not lost or neglected.

In summary, it appears that West Virginia youth are similar in many ways to low-SES youth in other regions of the United States. Although more young women than men stated they planned to attend college, the differences were not significant. This finding is consistent with those of King (1996) in her examination of low-SES students' college plans and of the AAS study (Spohn, et al., 1992). Individual academic variables representing prior academic success and preparation for college emerged as the most salient predictors of college aspirations. Students who aspired to college appeared to have been working toward that goal for most of their academic careers, suggesting that early interventions targeting elementary and junior high school aged students would be appropriate. Further, as stated previously, sex differences in motivating factors for college could aid school personnel and policymakers who wish to improve the college-going rates in rural Appalachia and other impoverished

rural areas. Young women may benefit most from encouragement to strive for higher education and information regarding resources, while interventions encouraging young men may require a more comprehensive approach. For both sexes, more information and help in the college exploration and decision process are needed. It is recommended that high school counselors (and other appropriate school staff) in rural West Virginia strive to improve access to information on college enrollment and financial aid.

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