ABSTRACT

SCHOOL MOTIVATION AND ACADEMCIC ACHIEVEMENT OF ADOLESCENTS LIVING IN APPALACHIA: THE INFLUENCE OF PARENTING BEHAVIORS AND FAMILY INTERACTIONS

By Courtney Nicole Osborne

The purpose of this study was to explore the relationship between several parental behaviors and family variables and school motivation and academic achievement of adolescents living in rural Appalachia. Participants were 707 students from rural Appalachian high schools. Multiple linear regression analysis was used to determine predictive significance of parental autonomy-granting behavior, support, monitoring, punitiveness, gender role attitudes, and familism on school motivation and academic achievement. Consistent with hypotheses and previous research, results demonstrated that traditional gender role attitudes were obstacles for school motivation and academic achievement. In addition, age-of-adolescent, gender, and fathers' level of education were significant predictors of school motivation and academic achievement. Parental support and parental autonomy-granting behavior were only selectively predictive of school motivation. Parental monitoring, punitiveness, and familism failed to predict either school motivation or academic achievement in any of the statistical models.

SCHOOL MOTIVATION AND ACADEMCIC ACHIEVEMENT OF ADOLESCENTS LIVING IN APPALACHIA: THE INFLUENCE OF PARENTING BEHAVIORS AND FAMILY INTERACTIONS

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Introduction

In the 1960's and 70's, the region of Appalachia and its culture were the focus of much research, particularly in the areas of poverty, education, and the importance of family life. The region of Appalachia consists of 410 counties in 13 states, extending from southern New York to northern Mississippi and including the upper two thirds of Alabama (Newsome, Bush, Hennon, Peterson, & Wilson, in press). Large portions of Appalachia have been plagued by poverty and socioeconomic disadvantage (Shutika, 2006). In addition, educational success and attainment are consistently lower in sections of Appalachia than in other regions of America (DeYoung & Herzog, 2006; Newsome et al., in press). A variety of factors contributed to these socioeconomic conditions, but the majority of past research has focused particularly on the influence of a historic and distinctive folk life combined with the geographic isolation of this region. Of particular importance for this study are the rich community traditions, close family ties, and distinctive socialization patterns that are frequently proposed to be characteristic of this region (Burns, Scott, & Thompson, 2006).

Despite extensive research and periodic social intervention efforts for several decades, improving the educational success of children and adolescents in Appalachia continues to be a major social concern. Although Appalachian educational attainment is growing along with the rest of the country and varies from below to above national averages, depending on the particular area, there continues to be a gap between the educational attainment of many Appalachians and the rest of the United States (Shaw, DeYoung, & Rademacher, 2004). These findings demonstrate the diversity across the Appalachian population and the complexities of addressing and improving educational success in Appalachia.

Past research has indicated that parents are a significant influence on an adolescent's academic achievement and career decision-making (Gotts & Purnell, 1986; Peterson, Stivers, & Peters, 1986). However, research on youth from Appalachia has not addressed how aspects of family relationships and parental socialization strategies predict *school motivation*, where school motivation is defined not only as academic achievement, but for the purposes of this study is defined more broadly as motivation for school involvement.

School involvement consists of participation in extracurricular activities, completion of homework, receipt of special honors and awards, and participation in honors classes. It is important to address family influences on school motivation because of the implications that

formal education may have for the future socioeconomic attainment and life quality of Appalachian youth. Consequently, the specific purpose of this study was to examine how academic achievement and school motivation are predicted by measures of autonomy, parental support, monitoring, punitiveness, gender role attitudes, and familism in a sample of adolescents who reside in rural Appalachia. Although the present research examined how dimensions of family life and gender role attitudes predict the general concept of school motivation, previous research on this topic is virtually non-existent, whereas a significant body of work has been completed on academic achievement both in Appalachia and in the general U.S. population of adolescents (Entwisle & Hayduk, 1988; Natriello & McDill, 1986; Patrikakou, 1996; Scott-Jones, 1995; Shaw & White, 1965; Steinberg & Lamborn, 1992; Wilson & Wilson, 1992). Consequently, the remainder of this literature review and the basis for the current hypotheses draws on scholarship dealing with how Appalachian family and socialization dimensions predict academic achievement. It is important to note, however, that because of this limitation in the current literature, school motivation is a broader concept than academic achievement and only tentative research expectations can be specified.

Distinctive Qualities of Appalachian Families

Several characteristics distinctive of Appalachians should be addressed when exploring the school motivation and academic achievement of Appalachian adolescents. First, Appalachian families stress close family bonds, a concept sometimes referred to as familism. Families are considered most important, where extreme value is placed on family support and loyalty (Triandis, 1995; Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005; Wilson & Peterson, 2000). Close family bonds translate into a more collectivistic Appalachian society than the norm in mainstream America (Triandis, 1995; Wilson & Peterson, 2000). As part of this collectivistic social patterning, Appalachian families emphasize the goodness and importance of family ties and responsibilities over individual goals and personal success (Triandis, 1995; Updegraff et al., 2005; Wilson & Peterson, 2000). For example, Appalachian families might encourage their children to remain in a job close to home in order to support their families rather than move away from home in pursuit of more individualistic educational and career goals. These attitudes and values may carry over into an adolescent's school motivation and academic achievement.

Emphasis on family bonds and a collectivistic mindset may lead to other distinctive qualities of Appalachian families, such as the tendency of parents to restrict the autonomy of

their children. Adolescent autonomy is valued in individualistic societies; however, more than families in the American, urban, mainstream, Appalachians may seek to instill collectivistic values in their children and, therefore, may restrict their children's participation in autonomy-granting activities (Triandis, 1995; Wilson & Peterson, 2000). Restricted autonomy or diminished autonomy-granting by Appalachian parents also may be influenced by socioeconomic status (SES), with families who face the circumstances of poverty demonstrating more controlling or authoritarian parenting styles (Baumrind, 1994). Many Appalachian families are of low SES, which may influence the tendency to exhibit parenting behaviors that restrict adolescent autonomy (Thorne, Tickamyer, & Thorne, 2004). Appalachian families also may use more punitive parenting styles (Taylor, Vargas, & Tseng, 1973), which also may be more characteristic of the stress experienced by families of low SES rather than Appalachian families per se (Baumrind, 1994; Thorne et al., 2004).

Another important aspect of Appalachian culture may be that families from this region have traditionally viewed educational success differently than other Americans. The emphasis of Appalachian culture on family and collectivistic values (Triandis, 1995; Wilson & Peterson, 2000) means that institutions that are commonly governed by external values, such as the school, have been regarded with suspicion. Formal educational institutions often are viewed as social agents that expose Appalachian youth to the more individualistic values of mainstream, urban America and contradict the rural, collectivistic values of Appalachian culture. Schools may threaten familistic values by socializing the young to aspire to higher education and careers that encourage residential mobility away from families in the pursuit of socioeconomic and geographic mobility. These familistic values that encourage children to stay close to home are especially important when addressing the career aspirations of Appalachian adolescents.

Research suggests that parents are the most influential source when Appalachian adolescents are making career decisions (Peterson, Stivers, & Peters, 1986). If parents do not encourage the young to pursue careers that lead to geographic mobility, the likelihood increases that adolescents will choose jobs that keep them in close proximity to their families. In addition, education is seen as an individualistic distraction from real world expectations where work at an early age is necessary in order to meet the immediate economic demands of providing for a family in Appalachia (DeYoung & Herzog, 2006). Consequently, parents who socialize for autonomy in a manner that contradicts immediate collectivistic (or familistic) needs may

encourage values leading to long-term success in school and geographic mobility among Appalachian adolescents.

Hypothesis 1: Parental autonomy-granting behavior will be a positive predictor of school motivation and academic achievement

During adolescence individuals strive to establish themselves as autonomous, or as developing the ability to be self-governing. Three types of autonomy have been identified: emotional, behavioral, and value. Emotional autonomy has to do with an adolescent's changing affective relationships, whereas behavioral autonomy is the ability to make one's own decisions. Value autonomy refers to the ability to form and commit to one's own system of values and standards (Steinberg, 1999). Given these complexities in the conceptualization of autonomy-granting, the present study examines the autonomy-granting behavior of parents who foster self-governance in behavioral decisions of adolescents about such areas as choice of friends, clothing style preferences, music tastes, entertainment choices, and dating partner determination.

Research has demonstrated that autonomous thinking and behavior is positively related to academic achievement (Steinberg, Elmen, & Mounts, 1989; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). Although the purpose of this study is to address autonomy as an independent variable where autonomy is predictive of school motivation and academic achievement, it is important to first understand how adolescent autonomy is fostered. Research has indicated that healthy forms of adolescent autonomy are cultivated by close parent-adolescent relationships rather than by strained relationships where adolescents are in constant conflict with parents for autonomy (Fuhrman & Holmbeck, 1995). In fact, tense family relationships during adolescence seem to suggest a lack of youthful autonomy or that the adolescent is separating from parents without maintaining positive bonds (Bomar & Sabatelli, 1996). For most adolescents in American society, an adaptive form of autonomy is best fostered in an authoritative household where parents provide structure and expectations for behavior, but are willing to discuss and modify these rules based on their adolescent's feedback. Autonomy results from a long process of gradual renegotiation in the parent-adolescent relationship and emerges within the context of continuing parental influence and supportiveness.

In America's individualistic society, an adolescent's motivation for school success and academic achievement is a result of his or her gradual emancipation through parent's autonomy-granting behaviors which reinforce the importance of learning to function independently

(Ginsburg & Bronstein, 1993; Rosenzweig, 2000; Steinberg, 1999). Formal education prepares the young to gradually take charge of their own lives while they are still connected to and supported by their parents as they are being gradually released into the broader social context. For these reasons, effective autonomy-granting behavior is at least partially responsible for fostering the educational success of American youth in the larger society (Peterson, personal communication, November, 25 2006).

Although research on autonomy-granting parenting practices in Appalachia is limited, a few conclusions are warranted based on related research about Appalachian parenting practices and views of education. Consistent with autonomy-granting parenting practices, Appalachian adolescents report greater life satisfaction when their family maintains clear expectations and is perceived as close and flexible (Henry, 1994). Consequently, the opposite form of parenting, the more harshly controlling or authoritarian style, does not promote healthy forms of autonomy (Baumrind, 1989). Instead, authoritarian parenting is likely to either inhibit autonomy or foster a type of autonomy based on feelings of hostility toward and separation from parents. A related idea is that families experiencing economic distress often exhibit more harshly controlling parenting styles (Baumrind, 1994), with poverty being a characteristic of many Appalachian families (Thorne et al., 2004). One possibility, therefore, is that autonomy-granting behavior may be less prevalent in Appalachian families and be less likely than in the mainstream culture to predict school motivation and academic achievement because poverty and authoritarian parenting may be more prevalent.

An alternative view is provided by a study that provides indirect support for the hypothesis that autonomy will be predictive of school motivation in Appalachia. Specifically, this study found that self-perceptions of career and life goal attainment and self-esteem were positive predictors of life satisfaction among Appalachian adolescents (Wilson, Henry, & Peterson, 1997). Both goal attainment and self-esteem were found to result from autonomous thinking and behavior and were necessary for school motivation. Consequently, these findings are consistent with the hypothesis that *parental autonomy-granting behavior will be a positive predictor of school motivation and academic achievement* of adolescents, which is the tentative hypothesis presented here. However, this prediction is offered somewhat tentatively because empirical evidence on this issue is limited and credible theoretical arguments exist that Appalachian socialization may differ somewhat from patterns in mainstream America.

Hypothesis 2: Parental support will be a positive predictor of school motivation and academic achievement

For the purposes of this study, parental support is conceptualized as the expression of warmth, nurturance, and encouragement by parents. Numerous studies have shown parental support to be predictive of academic achievement and other positive outcomes associated with social competence in the young (Peterson & Hann, 1999). When parents and children have warm and supportive relationships, children are more likely to identify with their parents and seek to please them through achieving academically (Shaw & White, 1965; Steinberg & Lamborn, 1992). The presence of a warm parent-child relationship, where parents encourage academic achievement and positive feelings about oneself, often predicts that adolescents will demonstrate higher levels of academic achievement (Steinberg & Lamborn, 1992).

Supportive parents who encourage academic achievement also often set higher standards for their children and are more involved in positive ways of helping their child succeed. For example, supportive parents are more likely to monitor the completion of their children's homework and tend to have high career goals for the young. These factors interact to facilitate high academic achievement and probably a broader sense of success in school by adolescents (Entwisle & Hayduk, 1988; Natriello & McDill, 1986; Patrikakou, 1996; Wilson & Wilson, 1992).

Amount of parental support is also related to an adolescent's development of intrinsic or extrinsic motivation. Intrinsic or internal motivation for academic success has been shown to be more predictive of academic achievement than extrinsic or external motivation, such as receiving money for good grades. Intrinsic motivation is best cultivated within a supportive parent-child relationship where parents both encourage and expect higher academic achievement (Deci & Ryan 1985; Ginsburg & Bronstein, 1993).

Few researchers have addressed the issue of parental support in Appalachia as it relates to academic achievement. Past research has found that Appalachian families may subscribe to more punitive styles of parenting where parental support is not a frequently associated quality (Taylor, Vargas, & Tseng, 1973). However, it has been suggested that strong community ties and support systems, which are characteristic of Appalachia, may provide the support adolescents need (The Rural and Appalachian Youth and Families Consortium, 1996). Therefore it is hypothesized that *parental support will be a positive predictor of school motivation and academic achievement.*

Hypothesis 3: Parental monitoring will be a positive predictor of school motivation and academic achievement

Parental monitoring has been found to be related to a number of behavioral outcomes for adolescents, perhaps most notably as being associated with lower levels of delinquent behavior (Pettit, Laird, Dodge, Bates, & Criss, 2001). In addition, parental monitoring has been found to be a negative predictor of externalizing behaviors, particularly in regards to association with deviant peer groups (Kim, Hetherington, & Reiss, 1999).

In terms of academic achievement, parental monitoring of homework and grades is associated with higher school achievement among adolescents (Clark, 1993; Muller & Kerbow, 1993; Scott-Jones, 1995). For example, parents who monitor their adolescent's homework completion are more likely to have children who complete their homework (Muller & Kerbow, 1993). In addition parental monitoring of after school activities is positively associated with academic achievement (Clark, 1993). In addition, general parental monitoring of all aspects of adolescent behavior, as is measured in the present study, is related to higher levels of academic achievement among adolescents (Bush, Supple, & Lash, 2004).

Upon review of the literature strong conclusions about the nature of parental monitoring in Appalachia cannot be drawn. One could argue, on one hand, that some Appalachian parents may not be able to monitor their children's school achievement to the same degree as other parents because of their lower socioeconomic and educational backgrounds (Thorne, et al. 2004). Spera (2005) proposed that parents in economic distress may not have access to educational resources and may lack the time needed to monitor their children's academic achievement. An additional idea is that traditional Appalachian suspicion of education might lower parental monitoring of academic achievement. However, others might suggest that, based on what is known about the high value Appalachians place on family, one can then predict that parents will be highly involved in monitoring many aspects of their children's lives, including academic achievement (DeYoung & Herzog, 2006). Thus, although the evidence is unclear in Appalachian populations, the tentative decision here is to offer a prediction consistent with research based on samples from outside Appalachia that *parental monitoring will be a positive predictor of school motivation and academic achievement.*

Hypothesis 4: Punitiveness will be a negative predictor of school motivation and academic achievement

Parental punitiveness is most characteristic of an authoritarian parenting style where parents demand obedience and conformity through the harsh, arbitrary use of force and coercion. Rules and expectations are rigid with no room for discussion or compromise. Research demonstrates that adolescents raised by authoritarian parents are more dependent and passive, and are less self-confident, inquisitive, and socially able (Fuligni & Eccles, 1993; Lamborn, Mounts, Steinberg, & Dornbusch, 1991). Adolescents sometimes become hostile toward parents and separate themselves emotionally and/or physically from parents who treat them in a punitive manner (Peterson & Hann, 1999). Consequently, authoritarian parents do not promote prosocial forms of autonomous behavior (Steinberg, 1999), which, as discussed previously, is a positive predictor of dimensions of social competence, including school motivation (Ginsburg & Bronstein, 1993; Peterson, 2005; Peterson & Hann, 1999; Rosenzweig, 2000).

School motivation and academic achievement in American society are often products, at least in part, of learning to function independently and solve problems in an individualistic society. Punitive parenting is not a form of socialization that promotes autonomy (Steinberg, 1999). Research demonstrates that the development of autonomy in the young is a positive predictor of academic achievement (Ginsburg & Bronstein, 1993; Rosenzweig, 2000), with the implication being that punitiveness will be a negative predictor of school motivation and academic achievement.

Punitive parents often view adolescents' growing independence and desire to make their own choices as rebellion and a threat to their authority. Instead of fostering autonomous decision-making, the reaction of punitive parents is to punish the child or enforce rigid rules that may restrict the child's activities within a narrow set of arbitrary expectations (Steinberg, 1999). However, research also demonstrates that punitiveness may have the opposite effect on adolescents than parents often intend. In fact, children from overly punitive and controlling homes may build up hostility toward parents and become more peer-oriented. More specifically, their behaviors and beliefs are more likely to be influenced by deviant peers, particularly in regards to antisocial behavior, than children who are raised in nonpunitive, autonomy-granting households (DeBaryshe & Patterson, 1993; Devereux, 1970). As previously discussed, internal or autonomous motivation for success is more conducive to academic achievement than efforts

to motivate through external (and often excessive) controls (Deci & Ryan 1985; Ginsburg & Bronstein, 1993), at least in the long-term. In regards to academic achievement, controlling and/or punitive parents are more likely to foster external motivation in the young by rewarding good grades, punishing bad grades, and excessively monitoring their homework and school performance. Consequently, adolescents who are subject to punitive parenting are more likely to develop achievement (and often lower achievement) based on control by others rather than attainment based on internal achievement motives (Deci & Ryan, 1985; Ginsburg & Bronstein, 1993). Parental punitiveness also fosters hostility and separation from the parent, which inhibits the tendency of some adolescents to succeed in school as an outgrowth of conforming excessively to parents' expectations. Instead, punitive strategies contribute to rebellion by adolescents, which diminishes the likelihood that adolescents will strive to be successful in school as an outgrowth of seeking to please their parents.

Although limited research addresses punitive parenting behaviors and academic achievement in Appalachia, one study found that Appalachian mothers were more likely to exhibit punitive parenting behavior than fathers (Taylor, Vargas, & Tseng, 1973). In addition, the economic conditions found in many Appalachian communities (Newsome et al., in press; Thorne et al., 2004) may lead to punitive parenting as a result of stressful circumstances associated with poverty and economic deprivation (Baumrind, 1994). The most accurate assessment, however, is that more current and extensive research is needed to draw informed conclusions about any similarities or differences in how Appalachian socialization strategies are predictive of developmental outcomes in youth. A tentative hypothesis is that *punitiveness will be a negative predictor of school motivation and academic achievement.* However, because some evidence suggests that Appalachian parenting practices may be disproportionately punitive, confidence in the accuracy of this hypothesis is less than if the same prediction was made in a sample of adolescents from mainstream America.

Hypothesis 5: Adherence to traditional gender roles will be predictive of low school motivation and academic achievement for adolescent females

This hypothesis addresses school motivation and academic achievement of adolescent females compared to males, as related to gender role attitudes because of the assumed relationships between these variables. For example, traditional gender roles may encourage females to marry, have children, and run a household at comparatively young ages, with the

result being that they may be discouraged from pursuing careers requiring considerable amounts of education. That is, females from families who prescribe to more traditional gender roles may not be as academically motivated as their male counterparts to pursue higher levels of education as a gateway to career attainment. This hypothesis seeks, therefore, to explore the relationship between traditional gender role values and the school motivation and academic achievement of adolescent females living in Appalachia.

Role theory is a perspective that can provide considerable insight into the impact of gender role expectations. This theory suggests that children model their beliefs and behaviors in regards to gender roles after those of individuals who function as significant others in their social network (Weitzman, 1979). In particular, research suggests that mothers play a significant role in children's development of gender role attitudes (Blee & Tickamyer, 1986; Boyd, 1989; Thornton, Alwin, & Camburn, 1983). Although research does not fully address why this is the case, mothers' impact on gender role development results from the fact that mothers are most often their children's primary caregivers and therefore have more influence on their children than fathers (Boyd, 1989). Moreover, mothers often function as models for behaviors stereotyped by society as gender appropriate. This is particularly important to consider when addressing the gender role development of Appalachian females. Historically, Appalachian families have held more traditional gender role beliefs in which childrearing and domestic activities are women's primary responsibilities, whereas men are household leaders and providers (Wilson & Peterson, 1993). Appalachian mothers who stay home and care for their families may do so because of the persistence of traditional gender role expectations. Because research shows that mothers play a significant role in their children's gender role development (Blee & Tickamyer, 1986; Boyd, 1989; Thornton et al., 1983), Appalachian mothers who adhere to traditional gender roles are likely to pass on these beliefs to their children through verbal expression of these beliefs and also through modeling behavior.

Limited research has addressed the relationship between traditional gender role attitudes and the academic achievement of adolescent females living in Appalachia. However, one study suggests that, as a result of traditional gender role values where women are expected to stay home and care for the children, the educational and career attainment of women is viewed as unnecessary. Such traditional, gender-linked values and expectations may result in low academic achievement among Appalachian females (Wilson & Peterson, 1993). Although popular opinion

may support this belief, changes in the Appalachian job market and economy, such as the closing of factories and mines, have forced many females to enter the work force or start home-based businesses (Oberhauser, 1995). The need to earn a living and enter the workforce may increase school motivation and academic achievement among adolescent females. However, because traditional gender roles are still valued in many Appalachian communities, entering the workforce is not always easy for women because many barriers to attainment are rooted in pervasive gender role attitudes. Many women find employment in more "gender appropriate" jobs in steel mills (i.e., secretaries, file clerks, etc.) and are not given opportunities for advancement. Gender-based obstacles also may affect an adolescent female's beliefs, motivation, and values regarding success in school (Tallichet, 2000).

For the purposes of formulating a hypothesis, such barriers to women's educational attainment in Appalachia can be viewed as rooted in persistent gender role attitudes, coupled with research identifying the important function mothers play in their daughters' gender role development (Blee & Tickamyer, 1986; Boyd, 1989; Thornton, et al., 1983). Traditional gender roles may have a greater negative effect on academic motivation and achievement of adolescent females than the positive effect resulting from the need for entering the workforce. Therefore the tentative prediction posited here is that *adherence to traditional gender roles will be predictive of low school motivation and academic achievement for adolescent females.*

Hypothesis 6: Familism will be a negative predictor of school motivation and academic achievement

Appalachian families are characterized frequently as being more strongly familistic in comparison to mainstream American families (Wilson & Peterson, 2000). In the individualistic American society, strong familistic values are somewhat deviant from the cultural norm of fostering autonomy for economic adaptability and geographic mobility. Familism is often conceptualized as a key component of collectivistism through which the family unit is considered of primary importance that takes priority over individualistic concerns (Triandis, 1995; Wilson & Peterson, 2000). Familism is marked by emphasis on family support, obligation, and involvement, as well as family loyalty and family reputation in the community (Updegraff et al., 2005; Wilson & Peterson, 2000).

In communities where familism is emphasized, there is often suspicion and mistrust of institutions, such as schools and government, which are viewed as conveying "outsider values"

(DeYoung & Herzog, 2006; Wilson & Peterson, 2000). Such reputed misgivings about school success among Appalachian youth are important for the present study because Appalachian families may be wary of the values conveyed by formal educational systems and school officials. Mistrust and suspicion by parents, in turn, may decrease parental involvement in schools and impair the educational success of Appalachian adolescents (Entwisle & Hayduk, 1988; Natriello & McDill, 1986; Patrikakou, 1996; Wilson & Wilson, 1992). Households characterized by strong familism tend to value strong interpersonal cohesiveness and achievement for group interests over individual achievement (Updegraff et al., 2005; Wilson & Peterson, 2000). Consequently, Appalachian families may be more likely to encourage their young to provide for their families through local means of employment rather than pursue career goals that may require residential mobility and loss of geographic proximity to family relationships (DeYoung & Herzog, 2006). Consequently, the final prediction for this study is that familism will be a negative predictor of school motivation and academic achievement.

A final comment in this review of literature is that research on Appalachian families seems to have become less urgent for scholars and great uncertainty exists as to whether distinctive aspects of Appalachian families still persist (Newsome et al., in press). Unfortunately, little is known about present day Appalachian families and the effects that modernization (and the information age that defines post-modernization) has had on parenting practices and academic achievement. The present study aims to shed light on families living in modern-day Appalachia and important hypotheses about how family characteristics may predict school motivation and academic achievement.

Methods

Participants

Participants were a convenience sample from two rural high schools in Appalachian counties located in southern Ohio and northern Kentucky where the median income was low and unemployment and poverty rates were high. There were 707 participants: 349 females and 358 males. Participants ranged in age from 14 to 19, with the mean age being 16. In terms of parents' educational attainment, the average father "completed high school," whereas the average mother both "completed high school" and had "other training (but not college)." Passive consent was utilized. Parents reviewed a letter and sent back a form if they did not want their child to

participate. Participation is this study was voluntary and no incentives were used to encourage participation.

Procedures

Surveys were administered to a convenience sample in 2002. The questionnaire took 35-45 minutes to complete and was given within school classrooms. The questionnaire contained 181 self-report items, which were responded to by 707 adolescent participants.

Measures

All measures were completed through adolescent self-report questionnaires. Measures were used to assess the dependent variables of school motivation and academic achievement as well as the independent variables of autonomy, parental support, parental monitoring, parental punitiveness, gender roles, and familism. Measures of adolescent gender and parents' socioeconomic status also were included.

School motivation was measured using a 21-item general school information measure which included questions addressing amount of time spent on homework, participation in honors classes, parent participation in school work, participation in extracurricular activities, and the receipt of special honors and awards. Factor analysis was conducted to determine those items that are most highly associated and that formed factors based on shared variation. Four items from the 21-item general school information scale were used. Those items consisted of: participation in honors classes, homework completion, receipt of school awards, and involvement in extracurricular activities. Participants responded to questions with *Yes* (2) or *No* (1). Cronbach's alpha for the scale was .54. Student self-reported grades ("mostly A's", "mostly, B's", etc.) were used to measure the second dependent variable, academic achievement.

Adolescent autonomy-granting was measured using a 10-item scale derived from previous research (Douvan & Adelson, 1966; Sessa & Steinberg, 1991), with participants reporting on autonomy-granting behavior from mothers and fathers separately. Items measure the degree to which parents allow adolescents to make decisions and participate in activities without excessive parental involvement or control using a four-point Likert scale. Answers ranged from *Strongly Agree* (4) to *Strongly Disagree* (1). The sum of their scores indicated the degree of autonomy, with higher numbers signifying higher levels of autonomy. The internal consistency reliability coefficient (i.e., Cronbach's alpha) for this scale was .85 for both mothers and fathers.

The Parent Behavior Measure (PBM) assesses adolescents' perceptions of parental behavior for mothers and fathers separately in terms of supportive and controlling dimensions of child socialization behavior (Henry & Peterson, 1995; Henry, Wilson, & Peterson, 1989; Peterson, Bush, & Supple, 1999; Peterson, Rollins, & Thomas, 1985). The scale includes subscales that address parental support, positive parental induction (reasoning), parental permissiveness, parental punitiveness, parental love withdrawal, and parental monitoring. Participants respond to items using a four-point Likert scale ranging from *Strongly Agree* (4) to *Strongly Disagree* (1). Negative items are reverse coded to obtain a sum total score representing each dimension of parental behavior, with high scores indicating higher adherence to that particular dimension of parental behavior.

For the present study, the subscales of parental support, parental monitoring, and parental punitiveness were used. Parental support was measured using a four item subscale that assessed the degree to which parental behaviors are perceived by adolescents to demonstrate feelings of warmth, affection, and a sense of being valued by the adolescent's socialization behavior (Peterson, et al., 1985). In previous research, Cronbach's alpha analysis for internal consistency revealed coefficients of .86 to .88 for parental support (Devereaux, Bronfenbrenner, & Rodgers, 1969; Heilbrun, 1964). The present study found Cronbach's alpha to be .88 for mothers and .86 for fathers. Parental monitoring, in turn, was measured by a 6-item subscale from the PBM (Peterson, et al., 1985). Once again, adolescents reported on mothers and fathers separately in regards to the extent that mothers and fathers supervise their activities, friendships, and money. Cronbach's alpha for the present study was .87 for mothers and .88 for fathers. Finally, parental punitiveness was measured using a 10-item subscale from the PBM (Peterson, et al., 1985) that addressed the degree to which mothers and fathers demonstrated verbal or physical controlling behaviors of a strict, harsh, or arbitrary nature. Cronbach's alpha for this scale was .87 for both mothers and fathers.

Views about gender roles were measured using at 10-item scale that was modified from a previous measure, The Attitudes Toward Women Scale, by Smith and Self (1980). This measure used a four-point Likert scale with answers ranging from *Strongly Agree* (4) to *Strongly Disagree* (1). Items from this scale measured both traditional and nontraditional gender role attitudes. For example, the item reading, "Unless it is absolutely necessary, women who have young children should restrict their activities and interests to the home" measures traditional

gender role attitudes, whereas the item, "The achievements of women in history have not been emphasized as much as those of men" measures a nontraditional gender role perspective. For scoring purposes, nontraditional gender role items were reverse coded. By recoding nontraditional gender role items, responses ranged from 1 to 4 with 4 being the most traditional response and 1 the most nontraditional response. Therefore, a high score indicates traditional gender role attitudes. The Cronbach's alpha for the present study was .74.

Familism was assessed using a 5-item scale derived from the Bardis Familism Scale (1959), which measured adolescents' feelings, loyalties, rights, and obligations associated with family bonds. For the present study, the Cronbach's alpha coefficient was .59. The measure uses a four-point Likert scale with answers varying from *Strongly Agree* (4) to *Strongly Disagree* (1). Scores from each item were added together, providing a total score with higher scores indicating higher levels of familism.

Measures of necessary control variables (age of adolescent, gender of adolescent, parents' marital status, and fathers' educational attainment) also were used in the statistical analysis for the present study. A standard self-report item included in the questionnaire was used to determine the age of participants. Gender of adolescent was scored with male = 0 and female = 1. Parents' marital status was scored as *Married* (1), *Divorced* (2), *Separated* (3), *Widowed* (4), S*ingle* (5), and *Other* (6). Educational attainment of fathers as reported by participants ranged from *Some Grade School* (1) to *Graduate Degree* (11).

Analysis and Results

The hypotheses for this study were tested using multiple linear regression analysis. Separate statistical models were used for the two dependent variables: school motivation and academic achievement. Variables were tested for gender-of-adolescent interactions, however significant gender interactions were not found at the .05 level, indicating that similar results applied to male and female adolescents. Separate multiple regression analyses were conducted for adolescent responses in regards to mothers and fathers, making four separate statistical models consisting of: (1) the maternal model for predictors of school motivation, (2) the paternal model for predictors of school motivation, (3) the maternal model for predictors of academic achievement, and (4) the paternal model for predictors of academic achievement. Hierarchical multiple regressions were used for each model in which the predictor variables were inserted into the equation in two steps. The first step consisted of sociodemographic control variables: age of

adolescent, gender of adolescent, level of education of the father, and marital status. In the second step of the analyses, the predictor variables parental autonomy-granting behavior, support, monitoring, punitiveness, gender role attitudes, and familism were entered into the equation. Each statistical model was examined for multicollinearity, which may be a concern if the average VIF is substantially greater than 1 or the tolerance is below 0.2 (Field, 2005). None of the variables in any of the models for this study had a VIF significantly higher than 1 or a tolerance below 0.2. Table 1, Table 2, Table 3, and Table 4 contain descriptive statistics consisting of the means and standard deviations for each of the statistical models' independent and dependent variables.

Table 5 provides the results for the multiple regression analysis involving the maternal influence predictors of school motivation. The sociodemographic variables age ($\beta = .082$, $p = .047$), gender, (where 0 = male and 1 = female; $\beta = .115$, $p = .010$), and level of education of father ($\beta = .119$, $p = .003$) were found to be positive predictors of school motivation. Divorce, an additional sociodemographic variable, was found to be a negative predictor of school motivation ($\beta = -.091$, $p = .030$). All other variables, including the primary theoretical variables of concern, failed to be significant predictors of school motivation.

Table 6 consists of the multiple regression results for predictors of school motivation in the paternal model. Among the sociodemographic variables, both age of adolescent ($\beta = .096$, $p = .022$) and level of education of the father ($\beta = .110$, $p = .010$) were predictors of school motivation. Perhaps inconsistent with previous findings (Steinberg, Elmen, Mounts, 1989; Vansteenkiste, Simons, Lens, Soenens, Matos, 2005), paternal autonomy-granting behavior was a negative predictor of school motivation ($\beta = -.110$, $p = .037$). This appears to mean that the autonomy-granting behavior of fathers predicts decreased rather than increased school motivation as much of previous research shows. In contrast, paternal support was found to be a positive predictor of school motivation ($\beta = .144$, $p = .012$). The final theoretical variable that displayed significance in the paternal model for school motivation was gender role attitudes, which was a negative predictor of school motivation ($\beta = -.100$, $p = .033$). This indicated that stricter adherence to gender role attitudes by adolescents was predictive of decreased school motivation for both males and females.

When looking at Table 7 and Table 8, similar results are displayed for academic achievement as was true for school motivation. For the maternal model of academic

achievement, significance was obtained for gender of the adolescent (β = .104, p = .018) and level of education of the father (β = .193, p = .000) (see Table 7). In addition, divorced, separated, and single marital statuses were significant negative predictors of academic achievement (see Table 7). Gender role attitudes was the only theoretical variable that attained significance as a predictor of academic achievement. Traditional gender role attitudes was a negative predictor of academic achievement (β = -.128, p = .005).

Gender of the adolescent, level of fathers' education, and divorced and single marital statuses were significant predictors of academic achievement in the paternal model. Both gender (β = .101, p = .024) and level of education of the father (β = .184, p = .000) were positive predictors, while divorced (β = -.092, p = .027) and single (β = -.096, p = .018) marital statues were negative predictors of academic achievement. As with the maternal model of academic achievement, gender role attitudes was the only significant theoretical variable predictive of academic achievement with β = -.143, p = .002 demonstrating a negative predictive relationship (see Table 8).

Summary and Discussion

The purpose of this study was to examine the degree to which several family interaction variables, consisting of parental autonomy-granting behavior, parental support, monitoring, punitiveness, gender role attitudes, and familism were predictive of adolescent success in school (i.e., measured as school motivation and academic achievement). It is important to address the results of this study in regards to the hypotheses that were made. Although the first hypothesis stated that *autonomy would be a positive predictor of school motivation*, parental autonomy-granting behavior was only a predictor of school motivation in the paternal model. Moreover, paternal autonomy granting behavior was found to be a negative predictor of school motivation, instead of a positive influence as was posed in the hypothesis. This is an unexpected finding that will be addressed later in this discussion section. Autonomy was not found to be a significant predictor within either the maternal or paternal models of academic achievement.

The second hypothesis proposed that *parental support would be a positive predictor of school motivation*. Like parental autonomy-granting behavior, parental support was a significant predictor of only school motivation within the paternal model. Support was not a significant predictor of school motivation in the maternal model or of academic achievement for the

maternal and paternal models. However, because paternal support was found to be a positive predictor of school motivation, some support was found for the second hypothesis.

The theoretical variables monitoring, punitiveness, and familism were not significant predictors of either school motivation or academic achievement in any of the statistical models. Consequently, no support was found for hypotheses three, four, and six. Possible reasons and implications will be addressed in the discussion that follows.

Significant support was found for hypothesis five which states that *adherence to traditional gender roles will be predictive of low school motivation and academic achievement for adolescent females*. Three of the four statistical models used in this study found traditional gender role attitudes (that is, the more traditional an adolescents' gender role attitudes, the more this inhibited school motivation and academic achievement) to be a negative predictor of school motivation and/or academic achievement: specifically, the paternal model for school motivation and both the maternal and paternal models for academic achievement. As previously stated, no significant gender interactions were found at the .05 level in any of the statistical models. It is important to indicate, however, that none of these results were significantly different for males versus female adolescents. Therefore, a conclusion cannot be drawn, based on these results, that adherence to traditional gender roles is predictive of low school motivation only for adolescent females. Instead, these results suggest that traditional gender role attitudes are an obstacle to school motivation and academic achievement regardless whether the youth is male or female.

Two additional findings were evident for predictions involving the hypothesized variables, with the first being that, contrary to the first hypothesis, paternal autonomy-granting behavior was a negative predictor of school motivation. Second, paternal support was a positive predictor of school motivation, providing some support for the second hypothesis. Finally, there were a number of control (or sociodemographic) variables that demonstrated significant results. Age of adolescent was a significant positive predictor of both maternal and paternal predictors of school motivation. Gender was a positive predictor of school motivation in the maternal statistical model and in both the paternal and maternal models of academic achievement (i.e., where male = 0 and female = 1). Fathers' level of education was a positive predictor of school motivation and academic achievement in all the regression models. Finally, parents' marital status was significantly related to academic achievement and school success, where deviations from intact family status were negatively related to school success and academic achievement.

As predicted in the fifth hypothesis, traditional gender role attitudes were found to be a negative predictor of academic achievement and school motivation in all the multiple regression models, except the maternal model for the predictors of school motivation. This means that adherence to traditional gender roles is predictive of low school motivation and academic achievement, while more egalitarian gender role attitudes appear to foster school motivation and achievement. Minimal research exists that addresses the relationship between gender role attitudes and academic achievement in samples of Appalachian youth. However, Updegraff and McHale (1996) found that girls from more egalitarian households performed better in math and science over time than girls from more traditional households. In regards to school motivation, traditional gender role attitudes in Application may help to perpetuate barriers to attainment which may affect school motivation among adolescent females (Tallichet, 2000). This research is consistent with the results of the present study demonstrating that traditional gender role attitudes are obstacles to academic achievement and school motivation.

Results showing paternal autonomy-granting behavior as a negative predictor of school motivation contradict both previous research and the first hypothesis indicating that autonomy will be a positive predictor of school motivation and academic achievement (Steinberg, Elmen, & Mounts, 1989; Vansteenkiste et al., 2005). These inconsistent results across the gender of parent/gender of adolescent dyads may also be reflective of the low reliability of the measure used for school motivation (Cronbach's alpha = .54) or it could be that in a culture that emphasizes collectivism, such as Appalachia, autonomy-granting may have an adverse effect on school motivation. It also may be possible that there are gender differences between mothers and fathers in regards to autonomy granting behavior and its ability to predict school motivation. However, further research is needed on this topic before elaborate conclusions can be made.

Paternal support was a positive predictor of school motivation; however maternal support was not a significant positive predictor of school motivation. Once again this inconsistent result could be a product of the low reliability for the school motivation measure. This could also reflect gender differences of mothers and fathers in Appalachia, although further research is needed to determine more specifically what these differences are and how they affect parenting behaviors. However, as predicted, supportive behavior from fathers does seem to have positive consequences for school involvement (Peterson & Hann, 1999; Steinberg & Lamborn, 1992).

Age of the adolescent was a sociodemographic control variable that provided unanticipated positive predictions for school motivation in both the maternal and paternal models. These differences could be explained by the fact that school motivation is a more general concept which measures aspects of maturity, responsibility, and involvement, rather than a specific measure of student performance (i.e., grades). The items composing the school motivation measure include participation in honors classes, homework completion, receipt of awards, and participation in extracurricular activities. These dimensions of adolescent development demonstrate motivation, responsibility, and the desire to be involved, which may increase as an adolescent becomes older and more mature. Academic achievement measured by grades may reflect aspects of maturity as well, but also may be limited to measuring the student's ability to test well. This may place less emphasis on aspects of individual motivation and the value that is placed on identifying with success in broader aspects of their schooling.

A second sociodemographic variable, gender-of-adolescent (i.e., where female = 1 and male = 0), was found to be a significant positive predictor of school motivation and academic achievement in all the statistical models except for the paternal predictors of school motivation. Results for this finding can be interpreted with the female category of this variable being a positive predictor of both school motivation and academic achievement. These findings are consistent with previous research indicating that girls demonstrate greater effort in school than boys (Downey & Vogt Yuan, 2005). School environments seem to provide environments that are condusive to success and adjustment by females more than is true for males. Apparently, girls have higher levels of "noncognitive" skills associated with academic achievement such as attentiveness, working well with others, and organizational skills (Jacob, 2002).

Fathers' education was used in this study as an indicator of socioeconomic status (SES) because previous research demonstrates that higher SES families are more likely to value and socialize their children for higher levels of academic achievement (Davis-Kean, 2005; Hortacsu, 1995). Results indicated that father's education level was a significant positive predictor of school motivation and academic achievement in all four statistical models analyzed for this study. The resulting positive prediction is consistent with previous research showing that parent's levels of education have positive consequences for children's academic achievement. This is based not solely on level of education alone, but on beliefs and expectations that educated parents are likely to transmit to their children (Davis-Kean, 2005; Hortacsu, 1995). These

findings suggest that Appalachian families may not deviate much, if at all, from mainstream American trends, a perspective that contradicts depictions of Appalachian families as "uneducated mountaineers" (Burns, Scott, & Thompson, 2006).

Parents' marital status also was found to be a predictor of school motivation and academic achievement. First, divorce was a negative predictor of school motivation in the maternal model and a negative predictor of academic achievement in both the maternal and paternal models. In addition, having separated parents was a negative predictor of academic achievement in the maternal statistical model. Finally, single parenthood was a negative predictor of academic achievement in both the maternal and paternal models. These findings are consistent with previous research indicating that deviations from intact family status may be negatively related to academic achievement by adolescents. Research demonstrates that children from divorced and single-parent families have lower levels of academic achievement than children from intact families (Amato, 2000; Downey, 1995; Finn & Owings, 1994; Jeynes, 2002; Thomson et al., 1994). However, research also indicates that low academic achievement of children from divorced or single-parent families can be explained by socioeconomic status rather than being from a divorced or single-parent home. For example, recently divorced and/or single-parents are more likely to have limited resources based on a single income and foster environmental circumstances that negatively affect the academic achievement of their children (Jeynes, 2002; Thomson, Hanson, & McLanahan, 1994).

Some methodological limitations of this study must be carefully weighed when conclusions are drawn from these findings. First, the sample was a convenience sample from Appalachian high schools located in depressed, rural counties. Therefore, the results can only be applied with some confidence to adolescents who live in depressed counties of Appalachia and cannot be generalized across all Appalachian adolescents.

A second limitation was the low reliability found for the school motivation measure. Because the items composing this scale had never been used before, factor analysis was performed to identify related items. The four items identified as representing a common factor for the school motivation measure resulted in a low internal consistency reliability coefficient of .54. Low internal consistency reliability for the school motivation measure may account for the lack of significant results among the majority of theoretical variables used in this study. However, despite low internal consistency reliability, several sociodemographic variables were

found to be significant predictors of school motivation, as well as the variables of interest for this study: paternal autonomy-granting behavior, parental support, and gender role attitudes. Despite some success with prediction, future research should seek to structure a more reliable school motivation measure to better explore the hypotheses of this study.

A closely related methodological problem was the low internal consistency reliability (.59) found for familism measured by an abbreviated version of the Bardis Familism Scale. This methodological issue also should be addressed in future research and a more reliable measure should be used. This is true, particularly in studies of family life in Appalachia, where familism has been such a central concern in understanding the uniqueness of traditional Appalachian culture.

Finally, academic achievement was measured by using self-reported grades, a measurement approach that may be less accurate than using the actual grades of students. Future research on a similar topic may need to use a more complex measure of academic achievement or one that is not subject to adolescent perceptions. This may help to explain why gender role attitudes was the only variable of primary concern in this study that demonstrated significant results as a predictor of academic achievement.

When addressing possible implications for further research, this study's findings on gender role attitudes and gender differences in academic achievement and school motivation are the most important findings. Future research should investigate possible relationships between gender role attitudes and greater academic achievement among Appalachian females. Moreover are there unique issues in Appalachia that serve as obstacles for success in school by boys? In addition, further research is needed to address the prevalence of traditional gender role attitudes among Appalachian populations and adolescent females' motivations for success and achievement in school as compared to males. It may be that Appalachian families have become more integrated into mainstream American culture to an extent that traditional gender roles are not emphasized as much as they once were. It is important that future research addresses these issues so that stereotypes and misconceptions about Appalachian families can be examined and corrected.

Maternal Model of School Motivation
Table 1: Descriptive Statistics

Variables	Mean	SD
School Motivation	6.811	1.129
Age of Adolescent	16.10	1.349
Gender of Adolescent	1.53	.533
Level of Education of Father	6.67	1.873
Marital Status		
Divorced	.2830	.451
Separated	.019	.137
Widowed	.021	.143
Single	.001	.083
Other	.016	.124
Autonomy-Granting	32.691	5.685
Support	13.892	2.688
Monitoring	19.542	3.770
Punitiveness	15.641	5.701
Gender Role Attitudes	23.438	4.871
Familism	13.944	2.769

Note. N=576

Paternal Model of School Motivation
Table 2: Descriptive Statistics

Variables	Mean	SD
School Motivation	6.811	1.130
Age of Adolescent	16.09	1.351
Gender of Adolescent	1.53	.535
Level of Education of Father	6.67	1.899
Marital Status		
Divorced	.279	.449
Separated	.015	.120
Widowed	.015	.120
Single	.006	.074
Other	.017	.128
Autonomy-Granting	32.042	5.7231
Support	13.303	3.009
Monitoring	18.561	4.050
Punitiveness	15.302	5.364
Gender Role Attitudes	23.528	4.853
Familism	13.961	2.760

Note. N=544

Maternal Model of Academic Achievement
Table 3: Descriptive Statistics

Variables	Mean	SD
Academic Achievement	1.98	.962
Age of Adolescent	16.11	1.343
Gender of Adolescent	.517	.500
Level of Education of Father	6.65	1.861
Marital Status		
Divorced	.285	.452
Separated	.020	.141
Widowed	.020	.141
Single	.009	.092
Other	.017	.129
Autonomy-Granting	32.705	5.384
Support	13.892	2.692
Monitoring	19.481	3.795
Punitiveness	15.610	5.673
Gender Role Attitudes	23.378	4.878
Familism	13.983	2.759

Note. N=590

Paternal Model of Academic Achievement
Table 4: Descriptive Statistics

Variables	Mean	SD
Academic Achievement	1.97	.959
Age of Adolescent	16.10	1.343
Gender of Adolescent	.509	.500
Level of Education of Father	6.65	1.886
Marital Status		
Divorced	.280	.449
Separated	.016	.126
Widowed	.014	.119
Single	.007	.084
Other	.018	.133
Autonomy-Granting	32.054	5.728
Support	13.303	2.983
Monitoring	18.547	4.024
Punitiveness	15.323	5.328
Gender Role Attitudes	23.470	4.854
Familism	13.990	2.738

Note. N=558

Multiple Regression Analysis of Predictors of School Motivation
Table 5: Maternal Model

Predictive Variables	Standardized Coefficients		
	Beta	t	Sig.
Model 1			
Age of Adolescent	.085	2.082	.038*
Gender of Adolescent	.150	3.684	.000***
Level of Education of Father	.123	3.022	.003**
Marital Status			
Divorced	-.113	-2.754	.006**
Separated	-.033	-.801	.424
Widowed	-.052	-1.284	.200
Single	-.065	-1.605	.109
Other	-.065	-1.583	.114
Model 1 Summary			
Multiple Correlation R	.258		
Adjusted R Square	.053		
Sig. F Change	.000		
Model 2			
Age of Adolescent	.082	1.994	.047*
Gender of Adolescent	.115	2.573	.010**
Level of Education of Father	.119	2.940	.003**
Marital Status			
Divorced	-.091	-2.179	.030*
Separated	-.033	-.819	.413
Widowed	-.041	-1.013	.311
Single	-.051	-1.255	.210
Other	-.050	-1.223	.222
Theoretical Variables			
Autonomy-Granting	-.035	-.677	.499
Support	.048	.837	.403
Monitoring	.081	1.696	.090
Punitiveness	-.071	-1.457	.146
Gender Role Attitudes	-.069	-1.484	.138
Familism	.030	.668	.505
Model 2 Summary			
Multiple Correlation R	.302		
Adjusted R Square	.069		
Sig. F Change	.020		

*Note. *p < .05; **p < .01; ***p < .001*

Paternal Model: Multiple Regression Analysis of Predictors of School Motivation
Table 6

Predictive Variables	Standardized Coefficients Beta	t	Sig.
Model 1			
Age of Adolescent	.094	2.214	.027*
Gender of Adolescent	.134	3.160	.002**
Level of Education of Father	.133	3.149	.002**
Marital Status			
Divorced	-.095	-2.229	.026*
Separated	-.028	-.670	.503
Widowed	-.016	-.380	.704
Single	-.057	-1.345	.179
Other	-.066	-1.556	.120
Model 1 Summary			
Multiple Correlation R	.247		
Adjusted R Square	.047		
Sig. F Change	.000		
Model 2			
Age of Adolescent	.096	2.289	.022*
Gender of Adolescent	.083	1.820	.069
Level of Education of Father	.110	2.602	.010**
Marital Status			
Divorced	-.070	-1.637	.102
Separated	-.035	-.833	.405
Widowed	-.002	-.052	.959
Single	-.054	-1.305	.192
Other	-.057	-1.355	.176
Theoretical Variables			
Autonomy-Granting	-.110	-2.087	.037*
Support	.144	2.523	.012*
Monitoring	.069	1.429	.153
Punitiveness	-.087	-1.775	.076
Gender Role Attitudes	-.100	-2.140	.033*
Familism	.024	.536	.592
Model 2 Summary			
Multiple Correlation R	.324		
Adjusted R Square	.081		
Sig. F Change	.000		

*Note. *p < .05; **p < .01; ***p < .001*

Maternal Model: Multiple Regression Analysis of Predictors of Academic Achievement
Table 7

Predictive Variables	Standardized Coefficients Beta	t	Sig.
Model 1			
Age of Adolescent	.055	1.394	.164
Gender of Adolescent	.170	3.279	.000***
Level of Education of Father	.203	5.148	.000***
Marital Status			
Divorced	-.097	-2.436	.015
Separated	-.111	-2.804	.005**
Widowed	-.052	-1.328	.185
Single	-.102	-2.575	.010**
Other	-.035	-.886	.376
Model 1 Summary			
Multiple Correlation R	.323		
Adjusted R Square	.092		
Sig. F Change	.000		
Model 2			
Age of Adolescent	.051	1.284	.200
Gender of Adolescent	.104	2.377	.018*
Level of Education of Father	.193	4.910	.000***
Marital Status			
Divorced	-.086	-2.126	.034*
Separated	-.108	-2.756	.006**
Widowed	-.046	-1.174	.241
Single	-.095	-2.393	.017*
Other	-.025	-.640	.523
Theoretical Variables			
Autonomy-Granting	-.029	-.570	.569
Support	.057	1.022	.307
Monitoring	.049	1.041	.298
Punitiveness	-.039	-.826	.409
Gender Role Attitudes	-.128	-2.824	.005**
Familism	-.024	.549	.583
Model 2 Summary			
Multiple Correlation R	.358		
Adjusted R Square	.107		
Sig. F Change	.018		

*Note. *p < .05; **p < .01; ***p < .001*

Paternal Model: Multiple Regression Analysis of Predictors of Academic Achievement
Table 8

Predictive Variables	Standardized Coefficients Beta	t	Sig.
Model 1			
Age of Adolescent	.061	1.470	.142
Gender of Adolescent	.168	4.100	.000***
Level of Education of Father	.204	5.000	.000***
Marital Status			
Divorced	-.097	-2.351	.019*
Separated	-.070	-1.721	.086
Widowed	-.012	-.288	.773
Single	-.094	-2.298	.022*
Other	-.037	-.897	.370
Model 1 Summary			
Multiple Correlation R	.311		
Adjusted R Square	.084		
Sig. F Change	.000		
Model 2			
Age of Adolescent	.054	1.325	.186
Gender of Adolescent	.101	2.259	.024*
Level of Education of Father	.184	4.478	.000***
Marital Status			
Divorced	-.092	-2.216	.027*
Separated	-.079	-1.946	.052
Widowed	-.005	-.133	.894
Single	-.096	-2.368	.018*
Other	-.030	-.740	.460
Theoretical Variables			
Autonomy-Granting	.008	.155	.877
Support	.043	.787	.432
Monitoring	.033	.712	.477
Punitiveness	-.074	-1.553	.121
Gender Role Attitudes	-.143	-3.116	.002**
Familism	-.036	-.817	.415
Model 2 Summary			
Multiple Correlation R	.358		
Adjusted R Square	.106		
Sig. F Change	.004		

*Note. *p < .05; **p < .01; ***p < .001*

References

Amato, P. R. (2000). The consequences of divorce for adults and children. *Journal of Marriage and the Family, 62*, 1269-1287.

Baumrind, D. (1994). The social context of child maltreatment. *Family Relations, 43*, 360-368.

Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 349-378). San Francisco, CA: Jossey-Bass.

Blee, K. M. & Tickamyer, A. R. (1986). Black-White differences in mother-to-daughter transmission of sex-role attitudes. *The Sociological Quarterly, 28*, 205-222.

Bomar, J. A. & Sabatelli, R. M. (1996). Family system dynamics, gender, and psychosocial maturity in late adolescence. *Journal of Adolescent Research, 11*, 421.

Boyd, C. J. (1989). Mothers and daughters: A discussion of theory and research. *Journal of Marriage and the Family, 51*, 291-301.

Burns, S. L. S., Scott, S. L., & Thompson, D. J. (2006). In R. Abramson & J. Haskell (eds.), *Encyclopedia of Appalachia*. Knoxille, TN: University of Tennessee Press. pp.149.

Bush, K. R., Supple, A. J., & Lash, S. B. (2004). Mexican adolescents' perceptions of parental behaviors and authority as predictors of their self-esteem and sense of familism. *Marriage & Family Review, 36*, 35-65.

Clark, R. M. (1993). Homework-focused parenting practices that positively affect student achievement. In N. F. Chavkin (Ed.), *Families and schools in a pluralistic society*. Albany, NY: State University of New York Press. pp.85-105.

Davis-Kean, P. E. (2005). The influence of parent education and parent income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*, 294-304.

DeBaryshe, B. D. & Patterson, G. R. (1993). A performance model for academic achievement in early adolescent boys. *Developmental Psychology, 242*, 795.

Deci, E. L. & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Publishing Co.

DeYoung, A. J. & Herzog, M. J. R. (2006). In R. Abramson & J. Haskell (Eds.), *Encyclopedia of Appalachia*. Knoxille, TN: University of Tennessee Press. pp.1518-1519.

Downey, D. B. (1995). Understanding academic achievement among children in step households: The role of parental resources, sex of stepparent, sex of child. *Social Forces, 73*, 875-894.

Downey, D. B. & Vogt Yuan, A. S. (2005). Sex differences in school performance during high school: Puzzling patterns and possible explanation. *Sociological Quarterly, 46*, 299-321.

Entwisle, D. R. & Hayduk, L. A. (1988). Lasting effects of elementary school. *Sociology of Education, 61*, 147-159.

Field, A. (2005). *Discovering statistics using SPSS for Windows*. Thousand Oaks, CA: Sage Publications, Inc. pp. 154-155.

Finn, J. D. and Owings, M. F. (1994). Family structure and school performance in eighth grade. *Journal of Research and Development in Education, 27*, 176-187.

Fuhrman, T. & Holmbeck, G. N. (1995). A contextual-moderator analysis of emotional autonomy and adjustment in adolescence. *Child Development, 66*, 793-811.

Fuligni, A. J. & Eccles, J. S. (1993). Perceived parent-child relationships and early adolescent' orientation toward peers. *Developmental Psychology, 29*, 622.

Ginsburg, G. S. & Bronstein, P. (1993). Family factors related to children's intrinsic/extrinsic motivational orientation and academic performance. *Child Development, 64*, 1461-1474.

Gotts, E. E. & Purnell, R. F. (1986). Families and schools in rural Appalachia. *American Journal of Community Psychology, 14*, 499-520.

Heilbrun, A. B. (1964). Parental model attributes, nurturant reinforcement, and consistency of behavior in adolescents. *Child Development, 35*, 151.

Henry, C. S. (1994). Family system characteristics, parental behaviors, and adolescent family life satisfactions. *Family Relations, 43*, 447-455.

Henry, C. S. & Peterson, G. W. (1995). Adolescent social competence, parental qualities, and parental satisfaction. *American Journal of Orthopsychiatry, 65*, 249.

Hortacsu, N. (1995). Parents' education levels, parents' beliefs, and child outcomes. *Journal of Genetic Psychology, 156*, 373.

Jacob, B. A. (2002). Where the boys aren't: Noncognitive skills, returns to school, and the gender gap in higher education. *Economics of Education Review, 21*, 589-598.

Jeynes, W. (2002). *Divorce, family structure, and the academic success of children*. New York: The Haworth Press.

Kim , J. E., Hetherington, E. M., & Reiss, D. (1999). Associations among family relationships, antisocial peers, and adolescent externalizing behaviors: Gender and family type differences. *Child Development, 70*, 1209-1230.

Lamborn, S. D., Mounts, N. S., Steinberg, L., & Dornbusch, S. M. (1991). Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 62*, 1049.

Muller, C. & Kerbow, D. (1993). Parent involvement in the home, school, and community. In B. Schneider & J. S. Coleman (Eds.), *Parents, their children, and schools*. Boulder, CO: Westview. pp.13-39.

Natriello, G. & McDill, E. L. (1986). Performance standards, student effort on homework, and academic achievement. *Sociology of Education, 59*, 18-31.

Newsome, W. S., Bush, K., Hennon, C. B., Peterson, G. W., & Wilson, S. M. (in press). Appalachian families and poverty: Historical issues and contemporary economic trends. In R. Crane (Ed.), *Families and poverty*. Newbury Park, CA: Sage.

Oberhauser, A. M. (1995). Gender and household economic strategies in rural Appalachia. *Gender, Place & Culture: A Journal of Feminist Geography, 2*, 51-70.

Patrikakou, E. N. Investigating the academic achievement of adolescents with learning disabilities: A structural modeling approach. *Journal of Educational Psychology, 88*, 435.

Peterson, G. W., Bush, K. R., & Supple, A. (1999). Predicting adolescent autonomy from parents: Relationship connectedness and restrictiveness. *Sociological Inquiry, 69*, 431-457.

Peterson, G. W., Rollins, B. C., & Thomas, D. L.(1985). Parental influence and adolescent conformity. *Youth & Society,16*, 397.

Peterson, G. W., Stivers, M. E., & Peters, D. F. (1986). Family versus nonfamily significant others for the career decisions of low-income youth. *Family Relations, 35*, 417-424.

Pettit, G. S., Laird, R. D., Dodge, K. A., Bates, J. E., & Criss, M. M. (2001). Antecedents and behavior-problem outcomes of parental monitoring and psychological control in early adolescence. *Child Development, 72*, 583.

Rosenzweig, C. J. (2000). A meta-analysis of parenting and school success: The role of parents in promoting students' academic performance. *Dissertation abstracts international section A: Humanities and social sciences, 61*, 1636.

The Rural and Applachian Youth and Families Consortium. (1996). Parenting practices and interventions among marginalized families in Appalachia. *Family Relations, 45*, 387-396.

Scott-Jones, D. (1995). Parent-child interactions and school achievement. In B. A. Ryan, G. R. Adams, T. P. Gullotta, R. P. Weissberg, & R. L. Hampton (Eds.), *The family-school connection: Theory, research, and practice*. Thousand Oaks, CA: Sage. pp.75-107.

Shaw, T. C., DeYoung, A. J. & Rademacher, E. W. (2004). Educational attainment in Appalachia: Growing with the nation, but challenges remain. *Journal of Appalachian Studies, 10*, 307-329.

Shaw, M. C. & White, D. L. (1965). The relationship between child-parent identification and academic underachievement. *Journal of Clinical Psychology, 21*, 10-13.

Smith, M. D. & Self, G. D. (1980). The congruence between mothers' and daughters' sex-role attitudes: A research note. *Journal of Marriage & Family, 42*, 105.

Spera, C. (2005). A review of the relationship among parenting practices, parenting styles, and adolescent school achievement. *Educational Psychology Review, 17*, 125-146.

Stallmann, J. I. & Johnson, T. G. (1996). Community factors in secondary educational achievement in Appalachia. *Youth & Society, 27*, 469-484).

Steinberg, L. (1999). *Adolescence* (5th ed.). Boston: McGraw-Hill.

Steinberg, L., Elmen, J. D., Mounts, N. S. (1989). Authoritative parenting, pychosocial maturity, and academic success among adolescents. *Child Development, 60*, 1424-1436.

Steinberg, L. & Lamborn, S. D. (1992). Impact of parenting on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*, 1266-1281.

Tallichet, S. E. (2000). Barriers to women's advancement in underground coal mining. *Rural Sociology, 65*, 234-252.

Taylor, J. A., Vargas, E. A., & Tseng, M. S. (1973). Socialization of aggression in low income rural Appalachian children. *Proceedings of the Annual conventions of the American Psychological Associations*, 691-692.

Thomson, E., Hanson, T. L., & McLanahan, S. S. (1994). Family structure and child well-being: Economic resources vs. parent socialization. *Social Forces, 73*, 221-242.

Thorne, D., Tickamyer, A., & Thorne, M. (2004). Poverty and income in Appalachia. *Journal of Appalachian Studies, 10*, 341-357.

Thornton, A., Alwin, D. F., & Camburn, D. (1983). Causes and consequences of sex-role attitudes and attitude change. *American Sociological Review, 48*, 211-227.

Triandis, H. C. (1995). *Individualism & collectivism*. Boulder, CO: Westview Press, Inc.

Updegraff, K. A. & McHale, S. M. (1996). Gender roles in marriage: What do they mean for girls' and boys' school achievement? *Journal of Youth & Adolescents, 25*, 73.

Updegraff, K. A., McHale, S. M., Whiteman, S. D., Thayer, S. M., & Delgado, M. Y. (2005). Adolescent sibling relationships in Mexican American families: Exploring the role of familism. *Journal of Family Psychology, 19*, 512-522.

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., Matos, L. (2005). Examining the motivational impact of intrinsic versus extrinsic goal framing and autonomy-supportive versus internally controlling communication style on early adolescents' academic achievement. *Child Development, 76*, 483-501.

Weitzman, L. J. (1979). *Sex role socialization*. Palo Alto, CA: Mayfield.

Wilson, P. M. & Wilson, J. R. (1992). Environmental influences on adolescent educational aspirations. *Youth & Society, 24*, 52.

Wilson, S. M., Henry, C. S., & Peterson, G. W. (1997). Life satisfaction among low-income rural youth from Appalachia. *Journal of Adolescence, 20*, 443-459.

Wilson, S. M. & Peterson, G. W. (2000). Growing up in Appalachia: Ecological influences on adolescent development. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *Adolescent diversity in ethnic, economic, and cultural contexts*. Thousand Oaks, CA: Sage. pp.75-109.

Wilson, S. M. & Peterson, G. W. (1993). The process of educational and occupational attainment of adolescent females from low-income rural families. *Journal of Marriage & Family, 55*, 158-175.

Appendix

The following scales were used in the questionnaires filled out by adolescents.

Demographic Variables

The sociodemographic control variables including the adolescent's age, gender, parents' marital status, and educational level of father were assessed through the following questions:

How old are you? 9 10 11 12 13 14 15 16 17 18 19

Are you male or female? 1. Male 2. Female

Are your parents: (circle answer)

1. Married	3. Separated	5. Single
2. Divorced	4. Widowed	6. Other

What is the highest educational level of the person who functions as your father most often on a daily basis?

1. Some grade school
2. Completed grade school
3. Some middle or junior high school
4. Completed middle or junior high school
5. Some high school
6. Completed high school or GED
7. Completed high school and also had other training, but not college (e.g., technical training, business school)
8. Some college
9. Completed college
10. Some graduate work
11. Graduate degree, including M.D., M.A., Ph.D., J.D., etc.

School Motivation

School motivation was measured using a 4-item scale taken from a 21-item general school information questionnaire. Through factor analysis the four items were determined to be related. Participants responded to questions with *yes* (2) or *no* (1).

1. Do you take honors classes in school?
2. Do you usually finish your homework?
3. Have you received any awards at school?
4. Are you involved in extracurricular activities related to school?

Academic Achievement

Academic Achievement was measured using adolescent self-report grades.

1. Which of the following best describes the grades you are getting in school?

    1. mostly A's 2. mostly B's 3. mostly C's
    4. mostly D's 5. mostly F's

Autonomy

Behavioral autonomy was measured by a 10-item self-report scale. Responses were given in a 4 point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*. Participants responded separately for mothers and fathers.

1. I feel that this parent gives me enough freedom.

2. This parent allows me to choose my own friends without interfering too much.

3. This parent allows me to decide what is right and wrong without interfering too much.

4. This parent allows me to decide what clothes I should wear without interfering too much.

5. This parent allows me to choose my own dating partner without interfering too much.

6. This parent has confidence in my ability to make my own decisions.

7. This parent encourages me to help in making decisions about family matters.

8. This parent allows me to make my own decisions about career goals without interfering too much.

9. This parent allows me to make my own decisions about educational goals without interfering too much.

10. This parent lets me be my "own person" in enough situations.

Parental Support

Parental support was measured using a 4-item subscale of the Parental Behavior Measure (Devereaux, Bronfenbrenner, & Rodgers, 1969; Heilbrun, 1964; Peterson, Rollins & Thomas, 1985). Responses were given in a 4 point Likert scale ranging from *Strongly Agree* to *Strongly Disagree* for both mother and father separately.

1. This parent has made me feel that he or she would be there if I needed him or her.

2. This parent seems to approve of me and the things that I do.

3. This parent tells me how much he or she loves me.

4. This parent says nice things about me.

Parental Monitoring

Parental monitoring was measured using a 6-item subscale of the Parental Behavior Measure (Peterson, Rollins & Thomas, 1985). Adolescents reported on mothers and fathers separately in regards to the extent that mothers and fathers supervise their activities, friendships, and money. Responses were given in a 4 point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*.

1. This parent knows where I am after school.

2. I tell this parent who I am going to be with when I go out.

3. When I go out, this parent knows where I am.

4. This parent knows the parents of my friends.

5. This parent knows who my friends are.

6. This parent knows how I spend my money.

Parental Punitiveness

Perceptions of parental punitiveness were measured using an eight-item subscale of the Parent Behavior Measure (Peterson, et al., 1985). Responses were given in a 4 point Likert scale ranging from *Strongly Agree* to *Strongly Disagree* for both mother and father separately.

1. This parent hits me when he or she thinks I am doing something wrong.

2. This parent does not give me any peace until I do what he or she says.

3. This parent punishes me by not letting me do things that I really enjoy.

4. This parent yells at me a lot without good reason.

5. This parent punishes me by not letting me do things with other teenagers.

6. This parent is always finding fault with me.

7. This parent punishes me by sending me out of the room.

8. This parent punishes me by hitting me.

Gender Role Attitudes

Gender role attitudes were measured using at 10-item scale which was modified from a previous measure, The Attitudes Toward Women Scale, by Smith and Self (1980). Responses were given in a 4 point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*. For scoring purposes, the traditional items were reversed coded.

1. The achievements of women in history have not been emphasized as much as those of men.

2. Women are by nature more emotional than men.

3. Unless it is absolutely necessary, women who have young children should restrict their activities and interests to the home.

4. In general, men tend to have more common sense than women do.

5. In general, working women are just as happy as housewives (women who stay at home and care for the children and household).

6. The career of men should take priority over the career of women.

7. Men are by nature more rational than women.

8. It is more important for men to be well educated than it is for women.

9. No woman's life is really complete until she marries.

10. Women who choose not to have children are denying their true roles in life.

Familism

Familism was measured using a 5-item scale derived from the Bardis Familism Scale (1959) which measures adolescents' feelings, loyalties, rights and obligations associated with family bonds. Responses were given in a 4 point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*.

1. Family responsibilities should be more important than my career plans in the future.

2. Despite opportunities in other areas of the country, I should try to live near my parents (legal guardians) in the future.

3. Family ties are more important than friendships outside of the family.

4. It is important for the family name to be continued.

5. A person should always be completely loyal to his or her family.