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Individual Motivation and Parental Influence on Adolescents' Experiences of Interest in Free Time: A Longitudinal Examination

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Time spent in freely chosen leisure activities offers a distinct developmental context that can support positive youth development; however this potential for growth depends in part on adolescent interest and engagement in their free time activities. Research indicates that many adolescents report experiencing boredom, instead of interest, in their free time. This study utilized longitudinal data from 354 rural middle school students to investigate how parenting practices and adolescent motivational styles influence adolescents' experience of interest in their free time. Findings indicated that adolescent self-regulated motivation and parental knowledge related to the free time context were positively associated with experiences of interest, while adolescent amotivation and parental control were negatively associated with interest in free time. The effect of parental knowledge and parental control on adolescents' experiences of interest was mediated by adolescent motivational styles. These results were similar across grade level and gender. Implications for interventions promoting positive youth development are discussed.

KEY WORDS: adolescence; leisure; motivation; parenting; time use .

INTRODUCTION

Research findings suggest that the activities adolescents engage in during their free time offer a distinct developmental context that has the potential to facilitate positive development and growth experiences (Hunter and Csikszentmihalyi, 2003; Larson, 2000; Silbereisen and Todt, 1994). During free time, compared to other settings of adolescents' daily lives, adolescents are more likely to experience identity exploration, intrinsic motivation, initiative, and skill development (Larson, 2000; Silbereisen and Todt, 1994). The developmental benefits associated with free time are thought to depend on the adolescents' sustained engagement in freely chosen, meaningful, and interesting experiences (Csikszentmihalyi and Kleiber, 1991). Experiences of interest are thought to provide a driving force in adolescents' lives that promote exploration, learning, and growth (Hunter and Csikszentmihalyi, 2003). However, for many youth, this potential for positive development during free time is lost because they report high levels of boredom and disengagement from free time activities (Caldwell *et al*., 1992; Csikszentmihalyi and Larson, 1984; Larson and Richards, 1991; Shaw *et al*., 1996). Boredom does not only limit the potential for positive developmental experiences during adolescence, but it is also associated with delinquency, smoking, drinking, and drug use (Caldwell and Smith,

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1995; The National Center of Addiction and Substance Abuse, 2003).

An important question then becomes, "What factors influence whether adolescents are engaged in the pursuit of interesting and meaningful experiences in their free time versus settling for experiences of boredom?" Although sparse, existing theory and research on predictors of interest and engagement suggest that adolescents will be more likely to structure their environment in order to seek out interesting activities when they are internally motivated by a specific purpose, a goal, or intrinsic pleasure (Eccles and Wigfield, 2002; Foote, 1951; Ryan and Deci, 2000). This self-determined, intrinsic motivation can be contrasted with a state of amotivation, in which an individual acts without a clear purpose. Amotivation, due to its lack of agency is associated with negative affect and outcomes (Sheldon *et al*., 2004).

Research suggests that specific parenting practices, such as involvement, knowledge, and control, may impact adolescent motivation and free time experiences (Caldwell *et al*., 1999; Eccles *et al*., 1996; Kloep and Hendry, 2003). The current study utilized longitudinal data across 3 years to investigate how specific parental practices and 2 types of adolescent motivation (self-regulated and amotivated) specific to free time contributed to adolescents' experiences of interest (versus boredom) in this setting.

Defining the Free Time or Leisure Context

Studies report that adolescents spend over forty percent of their waking hours in discretionary free time (Larson and Verma, 1999). In the literature, the terms "free time" and "leisure" are often used interchangeably; however they may mean very different things. There are 3 common ways that leisure has been defined (Csikszentmihalyi and Kleiber, 1991). First, leisure has been defined as any time that is free. In the case of adolescence, this usually means any time outside of the context of school and work. A weakness of this definition is that it does not distinguish between activities that are freely chosen by the adolescents and obligatory activities (e.g., house cleaning, taking care of siblings) that are done outside of school or work hours. Thus, in this definition there are some free time activities that are not "leisurely" but are done in the space of time that is not obligated (i.e., not work or school).

Second, leisure has been defined as specific activity, such as school clubs or organized sports. This definition usually implicates participation in structured activities as opposed to individual activities such as hobbies or social activities such as hanging out with friends. A weakness of this definition is that there is not a consensus in the literature on what kind of activities are considered structured. Furthermore, there is not a consensus as to whether or not activities must be structured for developmental benefits to occur. For example, some research suggests that only those activities that are structured (in this case meaning extracurricular activities) provide youth with developmental benefits (Eccles and Barber, 1999; Hansen *et al*., 2003; Mahoney *et al*., 2003), while other research suggests that a broader range of activities may facilitate growth (Kleiber, 1999; Waterman, 2004).

A third definition of leisure is based on the subjective experiences of the individual. In this case, an activity that is freely chosen by the adolescent and done for its own sake (i.e., enjoyment, personal goal) is considered leisure (Csikszentmihalyi and Kleiber, 1991). Leisure defined by one's subjective opinion can be problematic because of the potential that activities such as drug use, vandalism or violent video games may be considered leisure if the individual engaged in them defines them as such.

A consensus regarding how to define leisure is lacking, although many scholars have written on the topic (e.g., Kleiber, 1999). Most of the leisure literature tends to focus more on the qualitative nature of the experience, and defines "leisure" as that which is intrinsically motivated, self-determined, and provides enjoyment and escape from daily tensions. On the other hand, most developmental research addresses "leisure" as activity, and in doing so, has attended mainly to adolescent activity patterns and outcomes associated with structured, extracurricular activities. The current study focused on the general context of adolescents' freely chosen free time experiences for 2 reasons. First, research on time use indicates that youth actually spend a small proportion of their free time in structured, extracurricular activities (Carnegie Council on Adolescent Development, 1992; Larson and Verma, 1999). Second, theory suggests that what makes free time a distinct developmental context is that adolescents can pursue freely chosen activities with the expectation of preferred experience (Csikszentmihalyi and Kleiber, 1991; Larson, 2000; Silbereisen and Todt, 1994). To discuss the theoretical framework, we use the terms "leisure" and "free time" interchangeably. Operationalization of "leisure" and the way it was explained to the adolescents in this study will be described subsequently.

Adolescent Interest Experiences in Free Time

Recently, there has been increased attention paid to experiences that contribute to positive development during adolescence (Hunter and Csikszentmihalyi, 2003; Larson *et al*., 2000; Pittman *et al*., 2001). Many have

concluded that adolescents' interest and engagement in their daily own lives is necessary to facilitate positive development (Caldwell *et al*., 2004; Hunter and Csikszentmihalyi, 2003; Izard, 1991; Larson *et al*., 2000). Boredom is often considered to be theoretically and operationally opposite of interest (Caldwell *et al*., 2004; Hunter and Csikszentmihalyi, 2003). Unfortunately, there is compelling evidence indicating that adolescents report increased experiences of boredom with age across all daily settings (Hunter and Csikszentmihalyi, 2003), including free time (Caldwell *et al*., 1992; Csikszentmihalyi and Larson, 1984; Larson and Richards, 1991; Shaw *et al*., 1996).

Similar to the work of Hunter and Csikszentmihalyi (2003) and Izard (1991), our concern is with adolescents' general experiences of interest in the free time context, rather than with a specific type of interest (e.g., a specific hobby). Therefore, in the current study, interest experiences in the free time context means that the adolescent is caught up, fascinated, and excited during their free time. If interest drives adolescents to learn, discover, and grow, experiences of boredom are thought to impede growth and positive development (Hunter and Csikszentmihalyi, 2003). Experiencing interest and engagement, rather than boredom, likely does not just happen for adolescents; instead it is believed that youth must put forth some active effort to maximize their free time experiences and reap the developmental benefits in this context (Caldwell, 2005a; Kleiber, 1999; Larson, 2000). Furthermore, for many adolescents, parental (or other adult) influence is critical to the ability to engage in preferred activities (e.g., Hutchinson *et al*., 2003). Thus, the current study investigated the influences of specific individual and contextual factors on adolescents' experiences of interest (versus boredom) in their freely chosen, leisure activities across the middle school years.

Adolescent Motivation and Free Time Experiences

Not only do adolescents report increased boredom (and conversely decreased interest) across middle adolescence (Eccles and Midgley, 1990; Wigfield and Eccles, 2002), they also report increased amotivation and decreased self-regulated and intrinsic motivation in leisure (Caldwell, 2005b). To be motivated means to be moved to do some action or behave in a certain way (Ryan and Deci, 2000). Our interest is in adolescents' motivations regarding their free time activities. Guided by self-determination theory (Ryan and Deci, 2000), we have conceptualized adolescent motivation as multidimensional. Self-determination theory argues that individual motivation is complex and that a dichotomous view of motivation (i.e., is one motivated or not) fails to address what type of motivation is guiding behavior. A multidimensional approach to motivation addresses both how much motivation is present and what underlying attitudes, values, and goals give rise to action (i.e., the why of action). Individuals engage in behaviors because of intrinsic or extrinsic motivations (or a mixture). Individuals also may engage in activity for no reason but to "go through the motions." It is important to differentiate among types of motivation because optimal human functioning is thought to depend on individuals becoming motivated by internal desires to seek out novelty, challenge, and engage in an activity as an end in itself (Ryan and Deci, 2000).

Self-determination theory (SDT) provided the framework to look more closely at motivation. SDT proposes 5 motivational styles: amotivation, extrinsic, introjected, identified, and intrinsic (e.g., Ryan and Deci, 2000). The motivational styles of primary interest in this study are amotivation and self-regulated motivation (a combination of identified and intrinsic motivations) because developmentally they are associated with the most positive and negative outcomes, respectively. Amotivation is defined as lacking intention to act, and means that an individual is not moved to engage in certain actions. The term amotivation represents the amount of motivation and answers the question, "is one motivated or not?" Self-regulated motivation deals with the orientation of the motivation that is present and answers the question, "is one's motivation internally driven?" Self-regulated motivation describes being motivated to engage in actions because of a desire for positive experiences and enjoyment, but also because of a desire to pursue personal goals and values. A self-regulated motivational style indicates that an adolescent has developed an internalized drive that moves him or her to action.

Most of the SDT research has been conducted in the educational literature, with some application to motivation for specific sports activities. Recently, Baldwin and Caldwell (2003) developed a measure of free time motivation that has provided an avenue for studying the role that different motivation styles play in adolescent free time experiences. This is a particularly important context to understand adolescent motivation, because theory and research suggests that the developmental benefits of free time use depend on adolescents pursuing freely chosen, interesting, and engaging activities. Existing theory and research has provided support for the argument that adolescents who are more self-regulated and internally motivated will be more likely to seek out new opportunities and restructure their environment in order to experience interest, avoid boredom, and be stimulated and challenged in their free time (Eccles and Wigfield, 2002; Grolnick

et al.,1997; Kloep and Hendry, 2003; Larson, 2000; Ryan and Deci, 2000; Weissinger *et al*., 1992).

However, as children transition into adolescence, a period of the lifespan that should facilitate youth becoming more active, invested, and engaged in their lives, research has found that motivation in general, and internal forms of motivation in particular, actually decrease (Eccles and Midgley, 1990; Wigfield and Eccles, 2002). This counterintuitive finding may be a result of a developmental mismatch between the changing needs of the adolescent and the opportunities present in their environment (Eccles *et al*., 1993). In other words, as children enter adolescence and seek more autonomy and control, the daily constraints placed on them may undermine their sense of internal motivation and self-determination. It is important to consider how environmental factors, and in particular parents, may enhance or hinder to development of internal (i.e., self-regulated) styles of motivation.

Parenting Practices, Adolescent Motivation Styles, and Free Time Experiences

Even during adolescence, parents remain a central socializing agent in children's lives and may play a particularly important role in adolescents' motivations and free time experiences (Caldwell *et al*., 1999; Eccles *et al*., 1996; Grolnick *et al*., 1997; Hutchinson *et al*., 2003). Research examining parents' influence on adolescents' motivation and experiences of interest is sparse, particularly in the critical domain of adolescent free time.

The limited research on parents' influence in this setting is surprising given that free time is a critical context in which the process of autonomy granting and renegotiations of freedoms unfolds. Research on parenting and adolescent development suggests that 2 specific parenting practices, parental knowledge and parental control, may play an important role in the types of motivational styles adolescents' exhibit in their free time (Caldwell *et al*., 1999; Eccles *et al*., 1996; Grolnick *et al*, 1997; Kloep and Hendry, 2003; Ryan *et al*., 1983). For example, when adolescents construe their parents' involvement in their activities or solicitation of information as too controlling it may lead to reductions in their sense of autonomy, self-determination, and self-regulated motivation, particularly in their discretionary free time (Grolnick *et al*.; Krapp, 1999; Pettit *et al*., 2001; Ryan *et al*., 1983).

These findings are consistent with the social control perspective on boredom, which suggests that adolescent boredom may be a response to parents exhibiting too much control over their activities and time use (Caldwell *et al*., 1999; Eccles *et al*., 1993; Larson and Richards, 1991). Ryan *et al*. (1983) found that even when participating in an activity that is inherently interesting to the adolescent, if there is a perception of too much external control, less intrinsic motivation is present in that activity. Similarly, in a study of early adolescents, Caldwell *et al*. (1999) found that adolescents report more boredom and experience more amotivation in their free time when they perceive too much external control from parents and other adults.

Although too much parental involvement and control may be detrimental to an adolescent's development of self-regulated motivation and may be related to amotivation, research suggests that some parental involvement, particularly during free time, facilitates positive development and reduction of problem behaviors. There is strong evidence that parental knowledge (i.e., knowing where one's child is and what he or she is doing) is associated with reduced substance use (Chilcoat *et al*., 1995; Fletcher *et al*., 1995; The National Center on Addiction and Substance Use, 2001) and delinquent behavior (Waizenhofer *et al*., 2004). It should be noted that there is a debate in the adolescent literature on the accuracy of the operational definitions of parental knowledge and parental monitoring (Crouter and Head, 2002; Stattin and Kerr, 2000). The substance use literature uses the term "parental monitoring." The items used in this study to measure the "parental knowledge" resemble the measure of "parental monitoring."

Research also indicates that parental knowledge of adolescent time use can promote positive development, including adolescent self-regulated motivation and self-determination (Grolnick *et al*., 1997). It is developmentally appropriate, and beneficial, for a renegotiation to increase freedoms to occur in the parent–adolescent relationship. At the same time, this research suggests that it remains important for parents to stay informed, involved, and knowledgeable about their adolescents' activities and whereabouts (Caldwell *et al*., 1999; Crouter and Head, 2002; Dishion and McMahon, 1998). Therefore, a balance between knowledge, facilitation, and control is needed. Little is known about this optimal balance during the transition into middle adolescence, thus our study examines these relations in a cohort of students from grade 7 through grade 9. In particular we were interested in whether adolescents' motivation styles (self-regulation and amotivation) mediated the role of parental knowledge and control on the development and sustenance of interest in free time.

Role of Adolescent Age and Gender

Adolescent motivational styles, parenting practices, experiences of interest, and their relations may vary by

age and gender. In a cross-sectional study of high school students, Hunter and Csikszentmihalyi (2003) found that older students reported being more often bored in their daily lives compared to their younger classmates. Also, although there has been little research examining gender differences in experiences of boredom or interest, existing studies have found that males report being bored more often in all settings of their daily lives (Watt and Vodanovich, 1992, 1999) and in their free time (Larson and Richards, 1991) compared to females.

Studies that have examined changes in parental knowledge and parental control during adolescence have had inconsistent findings. Because of the different developmental needs of adolescents, as they move from early to middle and late adolescence, it may be appropriate for parents to adjust their level of control and supervision of their children's free time (Kloep and Hendry, 2003). Some studies have found that parental knowledge and control decrease as children move through adolescence (Borawski *et al*., 2003; Bumpus *et al*., 2001; Smetana and Daddis, 2002), while others have found that parental knowledge is fairly stable during adolescence (Laird *et al*., 2003).

Gender may also influence the process of autonomy granting and impact the degree to which parents control and have knowledge of their adolescents' daily lives (Bumpus *et al*., 2001; Pettit *et al*., 2001; Smetana and Daddis, 2002). Research suggests that parents place fewer constraints on their male children (Hagan *et al*., 1987) and that female children may be monitored more closely by their parents (Dishion and McMahon, 1998; Smetana and Daddis, 2002). But, in contrast, other studies have found that parents provide more opportunities for their female children to be involved in family decision-making than their male children (Brown and Mann, 1990; Fuligni and Eccles, 1993).

Research has also been inconclusive regarding whether parental knowledge and control impacts males and females differently. Some studies indicate that parental knowledge of adolescent time use has a stronger positive impact on the behavior of male children (Borawski *et al*., 2003; Seydlitz, 1991), while other research findings suggest that parental knowledge has a stronger association with outcomes for female children (Steinberg, 1986). Also, Huebner and Howell (2003) found that relations between parental knowledge and control and adolescent outcomes do not vary by gender.

Objectives of the Present Study

To extend the existing research, we examined how adolescent motivational styles, parental knowledge, parental control, and experiences of interest related to adolescent free time changed over the course of middle school, and whether relations between parenting practices, adolescent motivational styles, and experiences of interest varied by grade level and by gender. First, we examined mean levels of experiences of interest, adolescent amotivation, adolescent self-regulation, parental knowledge, and parental control specific to the free time context across 7th, 8th, and 9th grades. It was expected that experiences of interest and self-regulated motivation would decrease, while amotivation would increase across the middle school years. We also expected that parental knowledge and parental control of adolescent free time would decrease across 7th, 8th, and 9th grades. Second, we investigated how parental knowledge, parental control, adolescent amotivation, adolescent self-regulation, and experiences of interest during free time were related. In particular, we examined whether the effects of parenting practices on adolescent experiences of interest in free time were mediated by their impact on adolescent self-regulation and amotivation. It was anticipated that adolescent motivational styles would mediate the impact that parenting practices had on adolescent experiences of interest. Third, we explored whether these associations varied by gender or grade level.

METHOD

Design

Data for this study were drawn from a longitudinal study designed to test the effects of the TimeWise: Taking Charge of Leisure Time (Caldwell, 2004) intervention, consisting only of the no treatment control group, because we were not testing the effects of the intervention. The intervention study included 9 middle schools located in rural northern Appalachia. Of the 9 schools recruited to participate, 4 were randomly assigned to the experimental group and 5 to the comparison group. All of the schools were in fairly low-income areas (approximately 35% of students received free or reduced price lunches), and were relatively small (less than 1000 students). After gaining human subjects approval, recruitment packets that described the study and included parental consent forms were sent home with the students. Across the control schools, consent forms were returned for between 51 and 88% of all seventh grade students (the average was 63%). Trained university students administered surveys during homeroom classes. Data were collected annually beginning in the fall of 2001.

Participants

Our sample included 354 middle school students (53% male) measured in the spring of the 7th, 8th, and 9th grades. The sample was predominantly White (96%). As shown in Table I, there were 6 different patterns of missing data in our sample over the 3 waves of the study. The largest pattern (78% of the participants) was for students who provided complete data at all 3 waves. Except as noted below, the full information maximum likelihood (FIML) feature in LISREL 8.51 (Jöreskog and Sörbom, 1996; du Toit and du Toit, 2001) was used to obtain the parameter estimates that included missing data in our sample. This procedure provides unbiased and reasonable estimates of standard errors in the missing data case (e.g., see Schafer and Graham, 2002; Graham *et al*., 2003).

Measures

Many of the measures used in this study were designed specifically for the evaluation study of the Time-Wise intervention. During measurement development, interviews and focus groups were conducted with a small sample of youth to help assess the face validity and readability of the items. Items were revised based on information gained through focus groups. All items were measured on a scale from 1, *strongly disagree* to 5, *strongly agree*.

It should be noted that the primary purpose of the data collection was to evaluate the effectiveness of an intervention to help students learn to develop interests and overcome boredom in free time (and thus experience what some scholars would call leisure, regardless of whether the activity was unstructured or structured) as a general life context. Because of the semantic confusion between the terms leisure and free time, and because the questionnaire was given to a lay audience (that is, not leisure or developmental scholars but adolescents), we used the term "free time" in our survey. Thus, the participants were given the following verbal instructions prior to completing the survey, "Most of the questions in the survey will ask you to think about what you do during your free time. When I say free time, I mean the time after school, in the evening, and on the weekends that some people call leisure time. I know you each do a lot of different activities in your free time, like playing sports, reading, watching TV, and hanging out with friends. When answering these questions, consider all of your freely chosen activities together, and try to answer how you feel about these statements in general. For example, some of these questions will ask you the reasons you do what you do in your free time, so please think about why you typically do what you do. We want to know how you feel about your free time in general."

Table I. Sample Size for Patterns of Missing and Nonmissing Values

Wave			Sample size		
1	2	3	Full sample	Males	Females
1	1	1	274	144	130
0	1	1	10	5	5
1	0	1	7	4	3
1	1	0	33	18	15
0	1	0	3	2	1
1	0	0	26	16	10

Note. 1 = data present; 0 = data missing.

Motivation in Free Time

Motivation was measured using the *Free Time Motivation Scale for Adolescents* (Baldwin and Caldwell, 2003). The current study utilized 2 motivational styles, amotivation and self-regulated motivation, in response to the stem "Why do you do what you do in your free time?" *Amotivation* consisted of 4 items (e.g., "I don't know why I do my free time activities, and I don't really care") and had an $\alpha = 0.77$. *Self-regulated Motivation* consisted of 9 items ("The activities help me develop into the person I want to become" and "What I do is important to me") and had an $\alpha = 0.83$. A high score on *Amotivation* indicates a lack of motivation, or acting without purpose (Baldwin and Caldwell). On the other hand, a high score on *Self-regulated Motivation* indicates that behavior is internally driven due to expectations of some internal reward (e.g., pleasure or accomplishing a personally valued goal).

Parenting Practices Related to Free Time

Parental control and parental knowledge were measured using items developed specifically for this study. The parenting items were designed to assess adolescents' perceptions of parenting related to free time. *Parental Control* refers to the extent to which adolescents feel that their parents interfere too much with or are overly controlling of how they spend their free time, and was measured using 8 items (e.g., "I think my parents interfere too much in my free time activities") and had an $\alpha = 0.68$. *Parental Knowledge* assessed adolescents' perception of their parents' knowledge about how they spend their free time, and included 8 items (e.g., "My parents know where I go and what I do after school") and had an $\alpha = 0.88$.

Interest in Free Time

Adolescents' experiences of interest in their free time were assessed using the *Boredom* subscale of the *Leisure Experience Battery for Adolescents* (Caldwell *et al*., 1992) combined with newly written items that focused on experiences of interest (following the work of Hunter and Csikszentmihalyi, 2003). The measure included 7 items (e.g., "My free time activities are very interesting to me" and "For me, free time just drags on and on") and had an $\alpha = 0.75$. Here, boredom and interest were treated as opposite experiences that adolescents could have in their free time. A high score (e.g., close to 5) on this scale indicated adolescents were more interested, rather than bored, in their free time.

Strategy for Data Analysis

Initial analyses were employed to identify and handle missing data as well as assess assumptions of normality. Due to some missing data, we first imputed multiple data sets using the EM algorithm (e.g., Little and Rubin, 2002) and Schafer's (1997) NORM program in order to yield unbiased estimates of the means and standard deviations for the key variables in the study. Difference scores comparing each wave of data were created for each variable and mean differences were tested using a Bonferroni correction; for these tests, we used $\alpha = 0.05/3$. *t*-Tests were used to test mean differences across gender. All subsequent analyses were performed using manifest-variable multiple regression (path analysis) with the FIML (missing data) and multiple group features in LISREL (version 8.51: Jöreskog and Sörbom, 1996). Using LISREL allowed for both the testing of our mediation model and tests of invariance in the relations (i.e., raw beta weights) across grade level and gender.

RESULTS

Descriptive Statistics for Key Variables

Descriptive statistics for the key variables are presented in Table II for the total sample and separately by gender. The means and standard deviations presented are based on estimates from the NORM program that accounted for missing data. Results of these tests are presented in the column labeled "post hoc" in Table II. Youth reported higher levels of amotivation, on average, in 9th grade compared to 7th and 8th grades. Youth also reported lower levels of self-regulated motivation in 9th grade compared to 7th grade. Adolescents reported higher levels of interest during free time in 7th and 8th grades compared to 9th grade.

Table II. Means (and Standard Deviations) for Key Variables by Grade and Gender

Variable	7th grade	8th grade	9th grade	Post hoc tests
Amotivation				
Male	2.06 (0.86)	2.11 (0.73)	2.30 (0.89)	
Female	2.03 (0.79)	2.02 (0.81)	2.25 (0.94)	
Total	2.06 (0.86)	2.07 (0.77)	2.27 (0.91)	9th > 7th, 8th
Self-regulated motivation				
Male	4.23 (0.56)	4.22 (0.57)	4.17 (0.52)	
Female	4.22 (0.42)	4.16 (0.52)	4.06 (0.57)	
Total	4.23 (0.56)	4.19 (0.55)	4.12 (0.55)	7th > 9th
Parental knowledge				
Male	3.69 (0.86)	3.61 (0.78)	3.54 (0.82)	
Female	3.89 (0.90)	3.86 (0.83)	3.85 (0.84)	
Total	3.78 (0.89)	3.73 (0.81)	3.69 (0.84)	
Parental control				
Male	2.53 (0.89)	2.42 (0.80)	2.50 (0.79)	
Female	2.47 (0.84)	2.50 (0.95)	2.47 (0.90)	
Total	2.50 (0.87)	2.46 (0.88)	2.49 (0.84)	
Interest in free time				
Male	3.86 (0.58)	3.90 (0.51)	3.80 (0.58)	
Female	3.85 (0.65)	3.77 (0.60)	3.65 (0.56)	
Total	3.85 (0.61)	3.83 (0.56)	3.73 (0.57)	7th, 8th > 9th

Note. EM (maximum likelihood) estimates of means and standard deviations are reported. Post hoc tests of significant mean differences performed with multiple imputation and Bonferroni correction (significance $p < 0.0167$).
$^{*}p < 0.05$; $^{**}p < 0.01$.

Compared to males, females reported that their parents had more knowledge of their free time use in 7th, $t(342) = -2.14$, $p < 0.05$ (2-tailed), 8th $t(318) = -2.83$, $p < 0.01$, and 9th grades, $t(289) = -3.25$, $p < 0.001$. Males reported higher levels of interest in their free time in 8th grade, $t(318) = 2.10$, $p < 0.05$ and 9th grade, $t(292) = 2.38$, $p < 0.05$ compared to females.

Relations Between Parental Knowledge, Parental Control, Adolescent Motivation, and Experiences of Interest in the Free Time Context

We examined how parental knowledge, parental control, adolescent self-regulated motivation, and adolescent amotivation were related to experiences of interest in free time. In particular, we investigated the possible role of adolescent self-regulated motivation and amotivation in mediating the relationship between parenting and experiences of interest. Finally, we tested whether these relations varied by gender. Prior to examining these

questions, however, we investigated whether it was necessary to distinguish between the different grade levels. Although differences in means were expected (as we found above), we explored whether the relations of the variables of main interest varied across grade. These preliminary analyses determined whether a more complex set of analyses must be considered across grades, or whether it would be appropriate to pool the covariance matrices across grade for the main mediation analyses.

Preliminary Analyses

Tests of invariance for each path in our model were conducted using LISREL to examine whether the raw beta weights were similar or significantly different across 7th, 8th, and 9th grades. First, we tested a model that included the 3 waves of data but did not constrain any of the relations to be invariant across time (i.e., all parameters were free to vary among 7th, 8th, and 9th grades). Second, we ran additional models that constrained each path, one by one, to be invariant across the 3 waves of data. The chi-square statistic was used to test whether the model fit significantly worse when beta weights were constrained to be equal across grade. Results suggested that the more parsimonious models (no differences between beta weights of different grades) fit as well as models with path coefficients that were free to vary. Therefore, we constrained all paths to be equal across grades 7th, 8th, and 9th grades in the final model described below.

Mediation Model

We tested the mediation model by assessing both the direct and indirect effects of the predictors on the outcome (MacKinnon *et al.*, 2002). Mediation implies a causal path in which a predictor (e.g., parental control and parental knowledge) causes a mediating effect (via adolescent amotivation and self-regulated motivation), which causes an outcome effect (e.g., interest).

The proportion of the variance in interest accounted for by parental knowledge and parental control are presented in Table III and provided the first step for testing mediation. We found that without the mediators in the model (adolescent amotivation and self-regulated motivation) both parental knowledge and parental control were significant predictors of adolescent experiences of interest. The final model is presented in Fig. 1. The predictive values of the independent variables are indicated with the unstandardized *b*-weights and corresponding *t*-values.[5] This model demonstrates indirect effects when the mediators are included in the model. Beta weights indicate the unique contributions of each independent variable on interest during free time. In the final model, parental knowledge had a significant effect on both mediators, it was negatively associated with adolescent amotivation and positively associated with self-regulated motivation. Parental knowledge did not have a residual direct effect on adolescent interest in free time, which indicated that adolescent motivation fully mediated the relationship between parental knowledge and adolescents' experiences of interest in free time. Parental control had a significant, positive association with adolescent amotivation, but not to self-regulated motivation. Parental control did have a significant residual negative direct effect on adolescent experiences of interest in free time, indicating partial mediation.

Table III. Total Effects of Parenting Practices on Interest During Free Time

	Parental knowledge	Parental control
Standardized beta weights	0.11	−0.21
Standard error	(0.02)	(0.02)
t-Value	5.35*	−10.30*

*$p < 0.05$.

Exploring Gender Differences in the Model

Our final aim was to explore whether these relations varied by gender. We tested gender invariance using the final model described above that constrained all paths to be equal across 7th, 8th, and 9th grades as our comparison model. Allowing paths to vary freely for males versus females failed to fit the data significantly better. Separate tests of model fit indicated that 1 path, adolescent amotivation to experiences of interest during free time, χ^2 $(df = 8) = 16.73$, differed significantly between males and females. For both males and females, amotivation was significantly and negatively related to experiences of interest, but this relation was stronger for females than males. The final model presented in Fig. 1 has all paths constrained to be equal between males and females except for this path.

The R^2's also are presented in Fig. 1 and estimate how much variance is explained by the model for 7th, 8th, and 9th grades and separated by gender. For males, the model explained 40% of the variance in experiences of interest in free time in 7th grade, 44% in 8th grade, and 35% in

[5] *t*-Values can be interpreted similarly to the d statistic as an indicator of the strength of effects across the model.

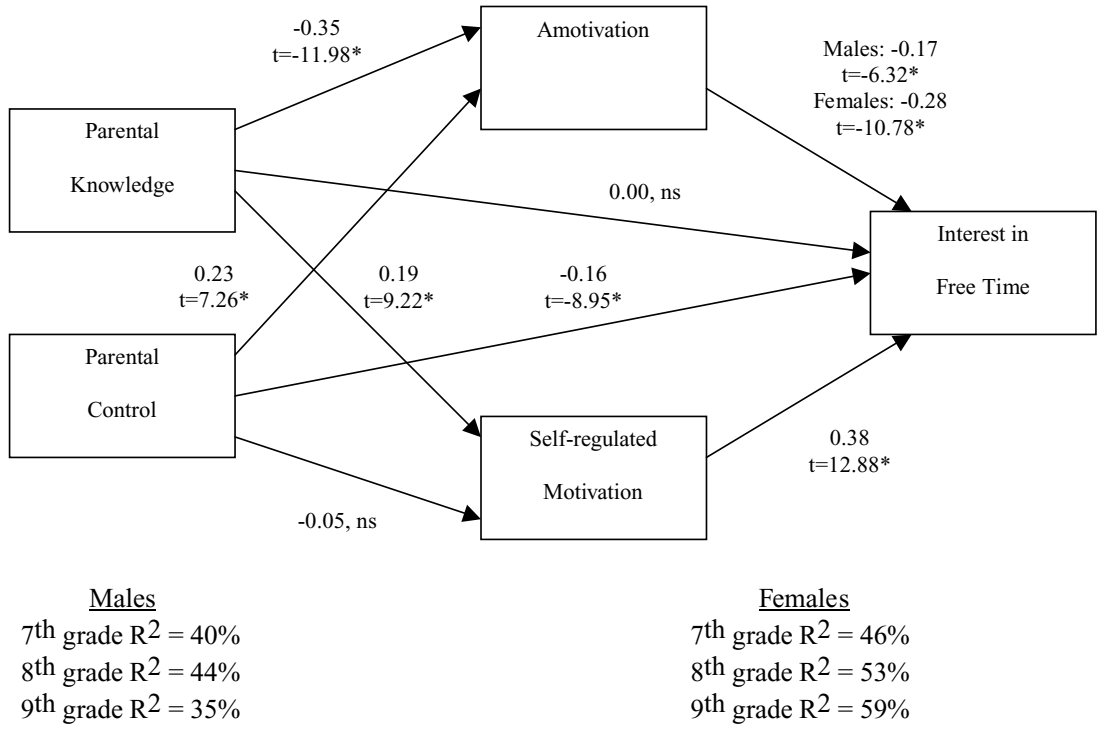

Fig. 1. A path diagram of the unstandardized beta weight estimates and *t*-values for the final model predicting adolescents' experiences of interest in their free time across the 3 waves of data.

9th grade. The model explained a larger percentage of the variance in experiences of interest in free time for females, ranging from 46% (7th grade) to 59% (9th grade).

Post Hoc Analyses

The extant literature on parental knowledge/monitoring and adolescent development has reported mixed findings regarding whether adolescent or parent behaviors contribute more to how much knowledge parents have about adolescent time use. For example, Stattin and Kerr (2000) found that adolescent behavior drives the level of parents' knowledge, rather than the reverse direction of effects. However, other studies seem to indicate that parental knowledge impacts children's behavior more so than the reverse (Waizenhofer *et al*., 2004). Our path analysis (Fig. 1) presumes that parental knowledge and control influences adolescent outcomes. We conducted post hoc analyses to explore the direction of effects, and examine whether any of the variables in this study clearly preceded other variables (i.e., occurred upstream in the path analysis). We conducted regression analyses examining relations between the parenting variables (parental knowledge and control) and adolescent motivation (self-regulated motivation and amotivation) across time, controlling either for the level of parenting or adolescent motivation at the previous time point.

With 1 exception, results indicated that the levels of parental knowledge, parental control, self-regulated motivation, and amotivation rose and fell in tandem from 1 year to the next. In other words, these relations were bidirectional at the ages of our sample. Results of the exceptional finding are presented in Table IV. In the first and second regression analyses in Table IV, parental knowledge at 7th and 8th grades accounted for variance in amotivation at 8th and 9th grades, respectively, after controlling for amotivation at 7th and 8th grades. Results of the 3rd and 4th regressions in Table IV suggested that amotivation at 1 time point does not predict parental knowledge at a later time point. Coupled with the negative regression weights, this finding suggests that parental knowledge precedes and leads to amotivation (e.g., low parental knowledge precedes amotivation). None of the results from the post hoc analyses were inconsistent with the path diagram of our final model in Fig. 1.

DISCUSSION

This study drew from developmental theory and research that suggests that adolescent free time activities

Table IV. Summary of Hierarchical Regression Analyses Examining Direction of Effects Between Parenting and Motivation Variables

Variable	Bivariate R	ΔR^2	B	SE(B)	β
DV—Amotivation 8th grade					
Step 1—Amotivation 7th grade	0.49***	0.24***	0.36***	0.05	0.39***
Step 2—Parental knowledge 7th grade	−0.41***	0.05***	−0.21***	0.05	−0.24***
DV—Amotivation 9th grade					
Step 1—Amotivation 8th grade	0.52***	0.41***	0.55***	0.04	0.60***
Step 2—Parental knowledge 8th grade	−0.37***	0.03***	−0.20***	0.06	−0.18***
DV—Parental knowledge 8th grade					
Step 1—Parental knowledge 7th grade	0.64***	0.41***	0.55***	0.04	0.60***
Step 2—Amotivation 7th grade	−0.35***	0.01*	−0.09*	0.05	−0.09*
DV—Parental knowledge 9th grade					
Step 1—Parental knowledge 8th grade	0.66***	0.43***	0.66***	0.05	0.62***
Step 2—Amotivation 8th grade	−0.35***	0.01	−0.09	0.06	−0.08

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

provide a unique context for positive youth development (e.g., Kleiber, 1999; Larson, 2000), and that this potential for growth may be compromised for youth who are bored, rather than interested and engaged, during free time activities (Caldwell *et al*., 1992; Larson and Richards, 1991; Shaw *et al*., 1996). We investigated the impact of specific parenting practices and adolescent motivational styles on adolescents' experiences of interest during free time across the middle school years. We were particularly interested in examining whether the influence parents have on adolescent free time experiences could be explained by parents' impact on adolescent motivation. Additionally, we tested whether these relations varied by grade level and gender. Results of this study contribute to the literature on free time use and adolescent development in several ways.

First, the study examined the patterns of adolescent reported motivation, perception of parental knowledge and parental control, and experiences of interest across 7th, 8th, and 9th grades. There were significant mean level differences in amotivation, self-regulated motivation, and interest in free time across grade level. Adolescents reported higher levels of amotivation in their free time in 9th grade in comparison to 7th and 8th grade, and lower levels of self-regulated motivation in 9th grade. These findings are consistent with previous research indicating that adolescents become less motivated in general and less internally motivated with age (Eccles and Midgley, 1991; Wigfield and Eccles, 2002). We also found that experiences of interest in free time decreased in the 9th grade. This finding is also similar to previous research (Hunter and Csikszentmihalyi, 2003). These results, taken together with findings of previous research, suggest that although adolescence is a period of the lifespan when individuals gain more autonomy and have more opportunity to direct their own developmental experiences, youth are becoming less motivated, engaged, and interested in their free time activities.

We did not find significant grade level differences in parental knowledge or parental control, which was surprising. Results from the few studies of parental knowledge and parental control across adolescence, suggest that both would decrease with age (Borawski *et al*., 2003; Bumpus *et al*., 2001; Smetana and Daddis, 2002). Perhaps youth do not perceive a significant reduction in their parents' level of knowledge and control, particularly regarding free time activities, until later in adolescence, or that changes occur earlier in adolescence. Future research could extend this study and include participants in high school grades as well as elementary grades to examine patterns related to these variables over an extended period.

We also tested for gender differences. Mean levels of parental knowledge and experiences of interest during free time did differ between males and females. Similar to previous research (Dishion and McMahon, 1998; Smetana and Daddis, 2002), females' parents were more knowledgeable regarding their free time use compared to males. It may be that parents ask their daughters more questions about their whereabouts, or that daughters provide their parents with more information about where they will be and who they will be with during their free time than sons. Males reported greater interest during free time compared to females, which is inconsistent with previous research on adults (Watt and Vodanovich, 1999). Studies of adolescent free time use indicate that boys experience greater participation in active activities and team sports (Carnegie Council on Adolescent Development, 1992). Perhaps because team sports are one of the most common youth activities in the United States (Larson and Verma, 1999), male adolescents have an easier time becoming engaged in activities and avoiding boredom during this age period.

The rural setting in which our participants live may also contribute to this gender difference. Although rural communities often lack a wide range of activity options for youth in their free time, all of the schools that took part in this study offered after school sports and males may have taken advantage of these opportunities more than females. It also is possible that activities like hunting and fishing, which are popular in this rural area of Appalachia, are more likely to be enjoyed by males than by females.

A 3rd contribution of this study was that we tested a model in which adolescents' motivational styles mediated the correlations between adolescents' perception of parental practices and adolescents' experiences of interest in their free time. Parental knowledge had a direct positive impact on adolescent interest while parental control had a direct negative impact on adolescents' interest. Results of the mediation analyses indicated that the influence of parental knowledge on adolescents' experiences of interest could be explained by the strong relationship between parental knowledge and adolescent motivation. Parental knowledge was associated with adolescents (a) having more motivation and (b) being more self-regulated or internally motivated in their free time. Our results suggested that when parents are involved in and knowledgeable about their children's free time activities, children are more likely to structure their environment to seek out interesting and engaging free time experiences.

Parental control had a direct, negative impact on adolescent experiences interest in free time that could not be accounted for fully by its influence on adolescent motivation. Although parental control had a significant, negative impact on whether or not an adolescent was motivated in their free time, it did not influence self-regulated motivation. One explanation for the direct relationship between parental control and adolescents' experiences of interest may be that parents who control their children's free time push them to participate in activities that do not fit well with the adolescents' own interests, skills, and abilities, which could certainly result in a lack of interest and disengagement for the adolescent. In addition, research on the impact of psychological control in the parent–child relationship suggests that controlling and intrusive parenting practices may interfere with children's competence, self-efficacy, and their development of independent selves (Barber and Harmon, 2002). Tracey (2002) found that adolescent competence and self-efficacy are important correlates of interest development in academic subjects. It may be that adolescents who perceive their parents as too controlling and intrusive in their free time feel less competent and efficacious more generally and are less likely to explore different kinds of activities and develop a sense of their interests and talents. It is also possible that parents increase their control over children's free time activities in reaction to low motivation for free time activities.

Because there is an ongoing debate in the literature regarding the direction of effects in research on parent–adolescent relationships, we conducted post hoc analyses to explore whether adolescent motivation had a greater impact on parenting practices or if the reverse was true. Our results indicated that although most of the relations between the parent and motivation variables are bi-directional, by early adolescence, parental knowledge and parental control are more strongly associated with future adolescent motivation than the reverse.

Fourth, we examined whether the relations between parenting, adolescent motivational styles, and experiences of interest varied across grade level and gender. Our results indicated there were no significant grade level differences across 7th, 8th, and 9th grades. Perhaps in earlier grades, parental control of free time might be more appropriate and may not have a negative impact on children's motivation and interest. Longitudinal studies that extend to earlier and older ages could contribute to the understanding of how these processes may change over time in the contexts of free time.

Only 1 significant gender difference was found. Amotivation had a stronger, negative impact on interest during free time for females than males. Little extant literature addresses this finding. Tracey (2002) found that males and females were decreasingly interested in general activities over time, but that males became less interested in artistic and social activities, whereas females became less interested in investigative activities during the transition from elementary to middle school. But this does not help us understand why amotivation had a stronger, negative effect on females. Perhaps it is linked to perceptions of competence or self-efficacy, which could be modeled in future studies.

Limitations

There are a few limitations of the current study that deserve consideration. First, all variables in the study were measured using adolescent self-reports. Relations found in this study may be slightly inflated due to single reporter bias. Self-reports were used because we felt that adolescents' perception of their parents' knowledge and control would have a stronger impact on their motivation and interest than parents' report of their level of knowledge and control. Future studies could include multiple reporters and multiple methods of data collection to clarify individual and contextual influences on adolescent motivation

and interest. Second, the requirement of active parental consent, combined with the fact that we had a fairly broad range of consent rates across schools, increased the probability that the highest risk students did not participate in the survey (Henry *et al*., 2002). Third, there are limitations to the generalizability of this study. Future research using larger, more nationally representative samples can help extend this work to understand if these findings are robust across different cultural and geographic samples. Despite the limitations, results from this study contribute to the growing literature on adolescent time use and positive youth development.

Implications for Intervention

Free time activities have been identified as a unique developmental setting that facilitates adolescent development, including the development of identity, initiative, and intrinsic motivation (Hunter and Csikszentmihalyi, 2003; Larson, 2000; Silbereisen and Todt, 1994). However, this potential for positive development is lost when adolescents are bored, disengaged, and uninterested in this setting. The finding that youth become less motivated, interested, and engaged as they get older suggests the need for intervention strategies that promote engagement and intrinsic motivation related to adolescent interest development in the free time context.

One promising activity-based recreational intervention is *TimeWise: Taking Charge of Leisure Time* (Caldwell, 2004), which is designed to increase youth's internal motivation to engage in meaningful, challenging, and interesting activities during their free time. An implication of the current study is that activity-based interventions, like *TimeWise*, may have a greater impact on youth outcomes if expanded to include a parent component. For example, parents could learn the importance and practice of autonomy-supporting behaviors and encouragements to their children and at the same time learn about the negative effects of being perceived as overly controlling. In addition, family-based interventions that target adolescent development in general may have a broader impact on youth outcomes if they address adolescent free time experiences and the importance of them to positive development. Results of the present study suggested that educating parents on optimal control and knowledge of their children's time as well as helping parents to facilitate their children's healthy use of free time could increase children's interest, self-regulation, and engagement.

A second implication of our results is that gender differences should be considered in interventions that target adolescent free time experiences. Female adolescents reported experiencing less interest (i.e., more boredom) in their free time than males. Although more research is needed to understand this finding, it is possible that there are fewer opportunities, particularly in rural settings, for females to participate in school and community-based activities. It may be important for communities, families, and intervention programs to address gender differences in the availability of free time activities. In addition, our findings indicate that amotivation has a stronger negative impact on adolescent experiences of interest for females. It may be even more critical for activity-based interventions to help females learn to seek out interesting free time experiences and restructure their environment to avoid boredom.

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