

Adolescent Positive and Negative Behavior and the impact on the Transition to Adulthood

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Thesis Submitted for fulfillment of the requirements for

The Degree of Bachelor of Arts with Honors in Psychology

From the University of Michigan

2011

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Abstract

This study examines the factors that may facilitate positive and negative behavior in adolescents and the implications of these behaviors as they transition into adulthood. For this study data was use from the Panel Study of Income Dynamic at the University of Michigan. The Child Development Supplement (II) data was collected using phone and face-to-face interviews in 2002 and 2005 for the Transition to Adulthood dataset. Participants in the Child Development Supplement had an average age of 14.2 and were 48.8 percent male. Participants in the Transition to Adulthood Study had an average age of 19.1 and were 49.3 percent male. Adolescents who engage in more negative behaviors were less likely to engage in positive behaviors. Adolescents who have higher school expectations are less likely to use drugs and consume alcohol. During the Transition to Adulthood, those who engaged in more positive behaviors are more likely to have a positive relationship with their parents and less likely to be arrested. There are many implications for this study, including new drug and alcohol preventions and a better understanding of the many ways in which negative and positive behaviors in adolescents affect adult outcomes.

Adolescent Positive and Negative Behavior and the impact on the Transition to Adulthood

Researchers, educators and parents are concerned about the short and long-term consequences that come from adolescent negative behavior (both externalizing and internalizing behaviors) for decades. Among these concerns are questions about the effect that negative behaviors have on education, drug use and family relationships. While many studies try to focus on the children who engage in negative behaviors and search for the reasons that they engage in these behaviors, it is important to understand why there are adolescents who are engaging in positive behaviors and not negative behaviors. It is also important to understand the long term consequences of these behaviors both in the long and short term. The focus of this paper is to examine how negative and positive behaviors may predict to important outcomes as adolescents transition into adulthood, including: substance use, relationship with biological parent and arrest record. A unique contribution of this research is the use of a nationally representative sample that provides two time points (one in high school and one a year or two after high school) to examine this transition.

Negative Behaviors in Adolescence

For many years researchers have been concerned with the development of negative behaviors in adolescents. Researchers have focused on the importance of parents and peers in the development of these behaviors. Most of these studies find that parents play an important role in which peers an adolescent chooses to be friends with and keeping an eye on what types of behaviors those peers are engaging in (Ary et al., 1999; Goldstien, Davis-Kean, & Eccles, 2005; Peterson & Zill, 1986 Vineo & Nation, 2009; Sen 2010). While this research explains an important dynamic in an adolescent's life, it gives very little understanding of the impact that a relationship with a respected adult has on an adolescent's behavior. Other researchers have

focused on protective factors that keep adolescents from engaging in negative behaviors. While a variety of family, peer and community factors were examined and found to have significant implications for adolescent positive and negative behavior, the researchers were unable to identify which of the factors were more important (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002). A study done by Donovan and Jessor (1985) tried to identify a single cause for adolescent's negative behavior. While no single cause from problem behavior could be found, in four cohorts there was a common variable of high levels of drinking, smoking, drug use and risky sexual behaviors. This study shows that across time there is a strong relationship between risky behaviors and negative behaviors in adolescence.

Due to the fact that negative behaviors tend to co-occur with many risky behaviors, such as drug and alcohol use, it is important that research understand the relation between drug and alcohol use and negative behaviors (Boles, Biglan, & Smolkowski, 2006; Donovan & Jessor, 1985). In fact when asked about drug use in the past thirty days, there was only a one percent difference between the amount of high school seniors who reported smoking cigarettes and those who had smoked marijuana. For tenth graders, the percent of those smoking cigarettes within the thirty days was less than those who had smoked marijuana (Johnson, O'Malley, Bachman, & Schulenburg, 2009). Even more alarming is the finding that marijuana use rose from 12% to 14% from 2008 to 2009. This is alarming because this rise comes after a decade of declining drug use (Johnson, O'Mally, Bachman, & Schulenburg, 2009). It is important to understanding the causes of negative behavior and its effects on drug use to help prevent adolescent drug use and any co-occurring dangers.

Positive Behaviors in Adolescence

While the development of negative behaviors in adolescence has been well documented, the development of positive behaviors, however, has not been as thoroughly researched. In the past, many studies have assumed that the lack of negative behaviors was an indication of positive behavior. However research is now focusing on these two constructs as separate models of adolescent development (Benson, 2007). When behaviors are grouped into the two categories (some positive behaviors, other negative behaviors) the co-occurrence between one positive behavior, such as academic achievement, and a negative behavior, such as hard drug use, is extremely low (1%) (Boles, Biglan & Smolkowski, 2006). However, these low-incidence results have not been replicated. While the connection between positive behaviors and negative behaviors is important to study, many researchers have also begun to look at activities that promote positive behaviors. Extra-curricular activities are one of the many activities that have been linked to an increase in positive behaviors.

Adolescents who are highly involved in an activity, such as sports, a community organization, or volunteer work, are more likely to engage in more positive behaviors (Bartko & Eccles, 2003). Research, however, has been inconclusive when it comes to the use of drug and alcohol use in adolescents who participate in extra-curricular activities. Some studies see a general positive correlation between activity involvement and others note that time involved in an activity is more important to predicting drug and alcohol use (Eccles & Barber, 1999; Zill et al., 1995).

Academics and Adolescent Behavior

Academic failure has been correlated with drug use, arrest, and negative adult outcomes (Ansary & Luther, 2009). Academic motivation has also been shown to be a moderating factor that keeps adolescents from substance use (Bryant, Schulenberg, Bachman, & Johnston, 2003;

Zimmerman & Schmeelk-Cone, 2003). This research raises the question of how an adolescent's expectation of how far they will go in school impacts his or her motivation to stay away from drugs and alcohol. This evidence does not indicate if children who have higher expectations in school are engaging in more positive behaviors. If school expectations do reduce drug and alcohol use, then the implications for schools and parents would be significant. To fully understand adolescent's school expectations, it is important to understand how school expectations are formed by the adolescent.

An adolescent's parents may play a role in their child determining his or her school expectations. There is evidence that parent's involvement in school is important to helping an adolescent achieve academically (Duchesne & Ratelle, 2010; Tan & Goldberg, 2009). This research, however, does not help us to understand how a parent's expectations for their child will impact the adolescent's expectations and behaviors. This study will attempt to find similarities between the educational expectations of the parents and child.

Parent-Adolescent Relationship and Adolescent Behavior

Several studies have indicated that the relationship between parents and adolescence is important in understanding individual differences in adolescence problem behavior (Ary et. al., 1999). Parental warmth towards their adolescence has also been shown to be an important factor in reducing drug use (Broman, Reckase, & Freedman-Doan, 2006). While important studies about the relationship an adolescent has with his or her parent affects different areas of the adolescent's life, studies that show a strong relationship between adolescent behaviors and the relationship with a parent are lacking in numbers. This study is interested in how a close relationship with a parent affects an adolescent's positive and negative behavior.

Adolescent Behaviors and their Effect on the Transition to Adulthood

Research has been focused on the transition from adolescence to adulthood, especially when it comes to drug use and education. Messersmith and Schulenburg (2008) found that drug use and educational expectations in adolescence were extremely reliable predictors of graduation from college. This study also found that involvement in activities and engagement in negative behaviors also played a positive and negative role, respectively, in an adolescent graduating from college. High rates of marijuana use in adolescents have been associated with higher rates of crime and use of other illicit drugs (Fergusson, Horwood & Swain-Campbell, 2002). However, there is a high amount of binge drinking in college that subsides after the young adult has graduated (Schulenburg et. al., 1996). While concerning to some researchers, this finding is not associated with long term negative consequences. While illicit drug use is an important area of research, many researchers are also concerned about the affects of the relationship between the young adult and his/her biological parents.

Many studies have shown that an adolescent's relationship with his or her parents improves and becomes more supportive as he or she moves into adulthood (Aquilino, 1997; Thornton, Orbuch, & Axinn, 1995). However, these studies do not indicate how these relationships affect the life of the young adult. If a positive relationship with a parent can help negate negative behaviors, maybe it can have more of an impact for young adults.

This same concept has been applied to extra-curricular activities. Extra-curricular activities have been shown to help adolescents stay away from drugs and do better in school, however the long term affects of these activities may be just as important as the short term affects. While involvement in extra-curricular activities can be positive in adolescence this does not mean that these adolescents will still stay away from drugs, continue to volunteer and are more likely to graduate from undergraduate and move on to graduate work in young adulthood.

Hypotheses

To understand how positive and negative behavior develops and later effects adolescents as they transition into young adulthood, a set of hypothesis were considered. First, it is hypothesized that adolescents who have high scores in negative behavior will have lower scores of positive behavior. Conversely, adolescents who have low scores on negative behavior will have high positive behavior scores.

Second, it is predicted that adolescents who have high scores for negative behaviors will be more likely to have used drugs and alcohol in the past month than adolescents who engage in high amounts of positive behavior. Moreover, adolescents who engage in high amounts of positive behaviors are more likely to have engaged in community or extra-curricular or community activities in the past 12 months than adolescents who engage in high amounts of negative behavior.

Third, adolescents and parents are likely to have similar expectations for the adolescent's education. Adolescents who have high expectations for his or her education will be more likely to engage in higher amounts of positive behavior. These adolescents will also be less likely to engage in drug or alcohol use in the past 12 months than adolescents who do not have high expectations for education will.

The fourth hypothesis considered the relationship that an adolescent has with an adult and its affect on behaviors. Adolescents who have a positive relationship with a parent or guardian is hypothesized to be more likely to engage in higher amount of positive behavior, less likely to use drugs or alcohol, and more likely to have higher expectations for their education.

The final hypothesis of this study focuses on the impact of positive and negative behavior on the transition to adulthood. Young adults who engage in more positive behavior in

adolescence are (i) less likely to use drugs and alcohol in young adulthood, (ii) continue to be more engaged in community and/or extra-curricular activities, (iii) have closer relationships with their biological parents and (iv) not be arrested when compared to young adults who engaged in more negative behaviors in adolescence. There is an exception to this hypothesis for young adults who are still in their undergraduate years of higher education.

Method

Participants

The participants in this study were taken from the Panel Study of Income Dynamics. There were a total of 3,019 participants in this study. The average age at time of interview for Child Development Supplement II in 2001 is 14.2. Then the sample consisted of 51.2 percent of females. The average age at time of interview for the Transition to Adulthood in 2005 is 19.1. In 2005, the sample consisted of 51% females. Approximately 51% of the sample is White, 42% is African American, <1% American Indian, 1.1% is Asian, .4% is Native Hawaiian, 1.1% is some other race.

Procedure

This study is a secondary analysis of data collected by the Panel Study of Income Dynamics Child Development Supplement II (CDS-II) and Transition to Adulthood (TA) study. The Child Development Supplement is an in-home interview about children and adolescents aged 5-18 years. For this analysis, the primary care giver and child interview was used. The CDS-II data was collected between 2002 and 2003. The TA study includes participants that had been interviewed for the Child Development Supplement in 1997 and were over the age of 18 in 2002. These interviews were conducted by phone in 2005.

Measures

Problem Behavior Index. The Problem Behavior Index (PBI) was adapted from the Achenbach Behavior Checklist (Achenbach & Edelbrock, 1981). The PBI consists of thirty-two different questions on the child's problem behavior. These questions asked about a wide variety of problem behaviors including disobedience, anxiety levels, bullying, temper, depression, and relationship with peers. The primary care giver was asked to rate the child from three choices: "often true", "sometimes true" or "not true". To create a total scale, an answer or "not true" was given a score of 0 and "sometimes true" and "often true" were given a score of 2. Each item was then summed to create the total scale. Cronbach's alpha for the total scale was .90.

Positive Behavior Scale. The Positive Behavior Scale was adapted from the New Chance evaluation (Polit, 1998). Parents were asked a series of ten questions that were rated on a five-point scale, where 1 means "not at all like your child" and 5 means "totally like your child". Some of these items included wither the child is upset easily, does neat work, is happy, and is self-reliant. To create a total positive behavior scale all of the items were averaged together after using a confirmatory factor analysis to create a total scale ranging from 1-5. Cronbach's alpha for the total scale was .82.

Educational expectations. Both the primary care giver and child were asked to rate how far they expected to go in their education. The rating range from 11th grade or less to MD, law degree, or other doctoral degree.

Alcohol use. Adolescents who are over the age of 12 were asked about how often they consumed alcohol within the past 12 months. Answers ranged from "everyday or almost every day", coded as a 1, to "never", coded as a 7. Alcohol use was then separated into three levels of alcohol use. The lowest level is no alcohol use, coded as a 1, less than once a month, coded as a 2, and two days a month or more, coded as a 3.

Drug use index. Adolescents aged 12 years and older were asked a series of questions about their drug and tobacco use. Included in the questions were cigarette use, inhalants, and marijuana. For each drug the children were asked if they had used the drug in the past 30 days and then how often they had used the drug in the past 30 days. The number of uses of each drug was added together to form an index of total drug use.

Extra-curricular activities. The primary care-giver was asked how often the child was involved in six activities. These activities included religious club or activity, athletic team, library story hour, visiting a friend's or neighbor's house, visiting a community center, and scouting (e.g., boy or girl scouts). The response categories ranged from "several times a week" to "never in the past 12 months". Cronbach's alpha for this scale is .52.

Relationship with Biological Parent. Adolescents were asked to rate how close they were their biological mother and father. The child was asked to rate each person from "not very close", coded as a 1, to "extremely close", coded as a 4. The rating for mother and father were then averaged together to create a scale ranging from 1 – 4. Cronbach's alpha for the scale is .71.

Transition to Adulthood.

Relationship with biological parent. Participants were asked to rate again how close they feel their relationship is with their primary care giver. This time participants were asked to rate their closeness to the adults who acted as mother and father to them on a scale of 1-7; one meaning not close at all and seven meaning very close.

Time use. Participants were asked to rate how often they were involved in different activities in the past 12 months. The answers ranged from less than once a month, at least once a month, once a week, several times a week, almost every day, every day, or never. Some of the

activities included are sports teams, reading for pleasure, political or social action groups, school clubs, and volunteer work.

Drug use. Participants were asked cigarettes, alcohol, and other illegal drug use. They were asked smoked cigarettes, if they smoked regularly or occasionally, and then how many cigarettes per day they smoked. Next participants were asked how often they drank alcohol. The answers included less than once a month, about once a month, several times a month, about once a week, or every day. Then participants were asked how many drinks they had on each occasion and then they were asked how many times in the past year they had more than four or five drinks on one occasion. Participants were then asked if they had ever used diet pills, amphetamines, marijuana, cocaine, barbiturates, tranquilizers, steroids, all or none in their lifetime. If participants said yes to any of these, they were asked how many times in their lifetime they had used each drug and how many times in the past month they had used each drug.

Arrest record. Participants were asked if they had ever been arrested. If they answered yes, they were asked why they were arrested. Some of the answers could include arson, assault, burglary and trespassing, drug offenses, fireworks violations, hit and run or others. Then participants were asked if they had ever served probation or jail time.

Results

First analyses were performed to determine if there were separate groups of adolescents, one group that engaged in high amounts of negative behavior and another that engaged in high amounts of positive behavior. The Problem Behavior Index ($M = 8.73$, $SD = 6.52$), originally a continuous scale, was split into three categories of negative behavior by quartiles: lowest 25% as low negative behavior, middle 50% as average negative behavior, and highest 25% as high negative behavior. An ANOVA was performed to examine mean differences between the three

groups to determine if they differed in amount of positive behavior ($M = 4.13$, $SD = .60$). The analysis showed that there was a significant difference between the three groups in positive behavior, $F(2, 2868) = 738.39$, $p < .001$. Adolescents who engage in high amounts of negative behavior engage in less positive behavior and vice versa.

To understand how behavior effects drug and alcohol use, a series of regressions and ANOVAs were used. The first ANOVA was run to determine if the categorized Problem Behavior Index showed mean differences between the three groups on alcohol use ($M = 1.48$, $SD = 2.57$). There was no significant mean differences between the three groups of problem behavior in alcohol use, $F(2, 537) = .19$, $p = .831$. In order to examine the mean differences in drug use, measures for central tendencies were examined for cigarette use ($M = 1.19$, $SD = 10.04$), marijuana use ($M = 1.35$, $SD = 10.20$) and inhalant use ($M = .74$, $SD = 8.46$). All three variables were then combined into a new variable, labeled as total drug use ($M = 1.50$, $SD = 6.53$). No significant mean differences of total drug use were found between the problem behavior groups, $F(2, 2045) = .40$, $p = .67$. A regression was then used to determine the relationship between both total drug use and alcohol use and positive behavior. There was no significant relationship between positive behavior and both alcohol use, $b = -.03$, $t(546) = -.73$, $p = .47$, and total drug use, $b = -.01$, $t(2070) = -.55$, $p = .59$. The hypothesis that adolescents who engaged in higher amounts of negative behavior would use more drugs and alcohol was not supported. Negative and positive behaviors did not predict drug and alcohol use in this sample.

Next, differences in engagement in extracurricular activities were examined. Only involvement in any extracurricular activities a scale was created by combining each of the seven separate activities into one large scale ranging from 7 to 49 ($M = 21.96$, $SD = 7.40$). Cronbach's alpha for this scale is .52. The new extracurricular scale was used in an ANOVA to determine

mean differences in engagement in extracurricular activities between the three levels of negative behavior. Significant mean differences were found, $F(2, 2836) = 18.97, p = .001$. To examine the relationship between positive behavior and extra-curricular activities, a regression was run. A significant relationship between positive behavior and extra-curricular activities was found, $b = .07, t(2871) = 3.92, p < .001$. Both hypotheses were supported. Adolescents who engaged in higher amounts of problem behavior are less likely to be involved in extra-curricular activities, while adolescents who engaged in higher amounts of positive behavior are more likely to be involved in more extra-curricular activities.

To begin testing the third hypothesis, a correlation between parents and adolescent's expectation for school was examined. No significant relationship was found between parent and adolescent school expectations, $r(1224) = .02, p = .53$. Next an ANOVA was run to determine how an adolescent's school expectations affected mean differences in alcohol use, drug use, and positive behaviors. Adolescent school expectations were divided into groups of three levels of expectations, low expectations, less than graduating high school, average expectations, graduating high school to attending a four year college, and, finally, high expectations, graduating from a four year college and beyond. Significant mean differences were found between drug use, $F(2, 1254) = 13.64, p < .001$, and alcohol use, $F(2, 559) = 3.77, p = .02$, among different levels of school expectations. No significant mean differences were found between levels of expectations in positive behavior, $F(2, 1222) = .17, p = .85$. The analysis supported the hypothesis that adolescents with higher school expectations would use fewer drugs and drink less alcohol. The hypotheses that parent's school expectations for their child would have a positive relationship with the adolescent's school expectations and that adolescents who have higher school expectations would engage in more positive behaviors was not supported.

Effects of parent-adolescent relationships were examined using a series of regressions. The first regression was used to understand the relationship between the closeness of an adolescent with a biological parent and positive behavior. No significant was found, $b = .04$, $t(1185) = 1.50$, $p = .13$. The second found a significant relationship between an adolescent's relationship with a biological parent and drug use, $b = -.15$, $t(1214) = -5.39$, $p < .001$, as well as alcohol use, $b = -.14$, $t(295) = -2.47$, $p = .01$. No significant relationship between an adolescent's relationship with a biological parents and his or her school expectations was found, $b = .03$, $t(712) = .87$, $p = .39$. The hypothesis that an adolescent who has a closer relationship with a biological parent would use fewer drugs and drink less alcohol was supported. The hypothesis that an adolescent who has a closer relationship with a biological parent would have higher school expectations and would engage in more positive behaviors was not supported.

Finally, analyses were conducted to understand how positive and negative behaviors affect the transition to adulthood. The affects of these behaviors on time use, including involvement in arts, sports, social action groups, school organizations, and volunteering, were analyzed using a regression. Age was also included in the regression. No significant relationship between positive and negative behavior was found for any of the five categories of time use (see Table 1 for statistics). However, there are significant differences between adolescents and young adults in their involvement in arts and sports (see Table 1). The hypothesis that adolescents who engage in more positive behavior will engage in more activities than those who engage in more negative behavior was not supported. There is no difference between adolescents who engage in high amounts of negative behavior and those who engage in high amounts of negative behavior in their time use in young adulthood.

The relationship between the young adult and his or her biological parents were then examined. A regression was used again to understand how adolescent positive behavior, negative behavior and age affect the relationship a young adult has with their mother and father. Neither positive behavior, $b = -.02$, $t(607) = -.42$, $p = .67$, negative behavior, $b = -.06$, $t(607) = -1.06$, $p = .29$, or age, $b = -.01$, $t(607) = -.32$, $p = .75$, had a significant impact on a young adults relationship with his or her father. There was a significant relationship between adolescent positive behavior and closeness to their mother in young adulthood, $b = .13$, $t(607) = 2.32$, $p = .02$. No significant relationship was found between closeness to mother and adolescent negative behavior, $b = .02$, $t(607) = .40$, $p = .70$, or age, $b = .00$, $t(607) = .08$, $p = .93$. The hypothesis that adolescents who engage in more positive behaviors are more likely to continue to have closer relationships with their biological parents than adolescents who engage in more negative behavior was not supported. Positive behaviors only had an effect for a young adult's relationship with his/her mother and negative behaviors had no effect on the relationship with either biological parent in young adulthood.

Next, the hypothesis that adolescents who engage in more positive behaviors are less likely to be arrested was tested using a regression analysis. There was no relationship between arrest and positive behavior, $b = -.05$, $t(618) = -.94$, $p = .36$, negative behavior $b = .14$, $t(618) = 2.60$, $p = .01$, or age $b = .03$, $t(618) = .78$, $p = .43$. The hypothesis was not supported. Engaging in more positive behaviors does not make you less likely to be arrested, however engaging in more negative behaviors does make an adolescent more likely to be arrested in adulthood.

Finally, drug and alcohol use in young adulthood was examined. A regression analysis was used to understand the relationship between the use of a variety of drugs, as listed in measures (e.g. marijuana, cocaine, and amphetamines), and alcohol use in young adulthood by

adolescent behavior and age. There were no significant relationships between age, adolescent positive or negative behavior in young adult usage of amphetamines, marijuana, cocaine, tranquilizers, and steroids (see Table 2). A significant relationship was found between age of participant and use of diet pills, $b = .10$, $t(618) = 2.57$, $p = .01$, however there was no significant relationship with adolescent behaviors found (see Table 2). There was no significant relationship between adolescent negative behavior and alcohol use in young adulthood, $b = -.04$, $t(374) = -.54$, $p = .60$. Age was found to have a significant effect on use of alcohol, $b = .12$, $t(374) = 2.33$, $p = .02$, and a smaller effect due to positive behavior, $b = -.12$, $t(374) = -1.66$, $p = .10$. Neither of the hypotheses was supported by the analysis. Adolescent behavior had no effect on drug use and positive behavior only had a small effect on alcohol use in young adulthood.

Discussion

The purpose of this study was to understand how adolescent behaviors, both positive and negative, affected psychosocial variables in adolescence and the transition to adulthood. Specifically, this study looked to understand how positive and negative behaviors during adolescence affected drug use, educational expectations, relationship with a biological parent and involvement in extra-curricular activities. Another goal of this study was to demonstrate that adolescents who engaged in high amounts of positive behaviors engaged in low amounts of negative behaviors and adolescents who engage in high amounts of negative behavior engage in low amounts of positive behavior. The results suggest that here are some important relations between both negative and positive behavior in adolescence and young adult outcomes.

The first hypothesis, that there are two separate groups of adolescents, one high in positive behavior and one high in negative behavior was supported by the analysis. This supports previous research that has shown that there is a significant difference between these two

groups of adolescents (Benson, 2007). It was important to observe positive and negative behaviors as occurring separate from each other in order to more accurately determine differences in educational expectations, drug and alcohol use, relationship with a biological parent and the transition to adulthood.

Positive and Negative Behaviors in Adolescence

The hypothesis that adolescents who engage in more negative behaviors are more likely to use drugs and alcohol in the past twelve months was not supported by the analysis.

Adolescents who engage in higher amounts of positive behavior were not less likely to use drugs or alcohol and adolescents who engage in more negative behaviors were not more likely to use drugs or alcohol. One conclusion for this finding is that there was so little variance in drug use; a majority of the participants responding that they did not use drugs within the past month. This finding is supported by research done by Monitoring the Future, which found that average lifetime illicit drug use among 10th graders is 15.8% (Johnson, O'Mally, Bachman, & Schulenburg, 2009). However, adolescents who engage in more positive behavior were found to use fewer drugs and consume less alcohol which supports past research which found lower use by adolescents with more positive behavior and higher use among adolescents who engage in more negative behavior (Boles, Biglan & Smolkowski, 2006; Donovan & Jessor, 1985). While this is a positive finding, because it shows that few teens are engaging in illicit drug use, it also implies that behaviors do not indicate drug or alcohol use which may make identifying adolescents at risk for drug or alcohol use more difficult.

The hypothesis that adolescents who engage in higher amounts of positive behaviors are more likely than their counterparts to engage in more extra-curricular activities was supported by the analysis. This finding supports past research which has also shown that increasing

involvement in extra-curricular activities is associated with more positive behaviors (Eccles & Barber 1999; Zill et al. 1995). However, unlike past research, time is not an explanation for the lack of negative behaviors in adolescents who are involved in more extra-curricular activities. To have a high positive behavior scale score, an adolescent had to be rated as well liked by others, getting along with others and liking new experiences. These are all traits that a person would need to be involved in more extra-curricular activities. Also the activities that were included in the questionnaire, such as church activities, scouting, and going to a community center, are activities where positive behaviors are strongly encouraged and negative behaviors are strongly discouraged. It is reasonable that these environments not only attract adolescents who engage in more positive behaviors but also once the adolescent is involved in these activities they are given more encouragement to continue to engage in more positive behaviors.

The hypothesis that adolescents who have parents who have high expectations for his or her education will also have high expectations for their education was not supported by the analysis. Like drug use, school expectations had very little variability, with most adolescent participants reporting that they expect to go to college. Parents who were less optimistic about their child's education; however, this may be more due to monetary issues than beliefs about the adolescent's ability to perform in an academic setting. Parent education, socioeconomic class and child behavior scales have all been linked to parent's school expectations for their children as well as academic performance (Davis-Kean, 2005; Halle, Krtuz-Costes & Mahoney, 1997; Zhan, 2005). In addition to having more monetary problems, less educated parents live in lower socioeconomic areas where less adolescents go on to higher education so parents hold less hope that their children will be able to break the cycle of poverty. The schools in lower socioeconomic areas also have lower standardize test scores and fewer resources, which may be

contributing to the parent's belief that their child may not do as well in college compared to those who attend school in a high socioeconomic area. The combination of monetary issues and the social comparisons made by parents may have contributed to the differences in expectations between the parents and adolescent.

Having higher educational expectations was found to have a significant negative relationship with drugs and alcohol. This finding is supported by past research where high education motivation was found to reduce the likelihood that an adolescent would use drugs or alcohol (Bryant, Schulenberg, Bachman, & Johnston, 2003; Zimmerman & Schmeelk-Cone, 2003). Researchers have found that engagement in school and school adjustment reduces alcohol initiation and consumption (Aunola, Stattin & Nurmi, 2000; Simons-Morton, 2004). Adolescents who are well adjusted to the school environment and who engage more proactively in school may expect to go farther in school and may see engaging in drug or alcohol use will reduce the likelihood of going onto college.

However, the hypothesis that higher educational expectations were positively related to an increase in positive behaviors was not supported. This may be due to the fact that there was so little variation among the participants in their expectations and parent's ratings of their positive behaviors. In the future, more extensive reports of educational expectations and goals as well as more measures of positive behaviors should be compared so that a better understanding of the differences can be provided.

When the adolescent's relationship with his or her biological parent was analyzed, only the hypothesis that adolescents who have a better relationship with at least one biological parent would use fewer drugs and drink alcohol less was supported. The hypotheses that adolescents with a better relationships with a parent would engage in more positive behavior and have higher

school expectations was not supported by the analysis. Only biological parents were used in this study to eliminate any confounding variables that come from any tension or turmoil between the adolescent and their step parents. Past research has found that adolescents who have remarried parents are more likely to engage in antisocial activities and more problems with their peers than even adolescents who live in single parent households (Dornbusch et al., 1985; Hetherington, 1999).

Adolescent Behaviors and the Transition to Adulthood

When analyzing time use during young adulthood, the hypothesis that participants who engaged in more positive behaviors during adolescence would engage in more positive time use was not supported. The results may not be due to behavior issues, however. When compared to adolescence, young adulthood leaves less leisure time for the participants. Many of them have jobs, are going to school, or are married and may even have children of their own. These responsibilities leave less time to engage in the same amount of extra activities, which was abundant during adolescence (Raymore, Barber & Eccles, 2001).

Next the relationship between participant's relationships with their parents during young adulthood and adolescent behavior was examined. The hypothesis that adolescents with more positive behavior would have better relationships with their parents during young adulthood was only supported for the young adult's relationship with his or her mother, not their father. The analysis shows that lack of positive behavior has more of an effect on the relationship with the mother than increased negative behavior. The effect may only be seen with mothers because they tend to be more involved with day to day parenting than fathers, especially those who do not live in the home, with the child so the lack of positive behaviors may be more stressful on the relationship and a strong mother-child bond is more difficult to build (DeGarmo, 2010; Halme,

Astedt-Kurki, & Tarkka, 2009; Herzog, Urmana-Taylor, Madden-Derdich, & Leonard, 2007). Surprisingly this outcome is also very different than the effect of adolescent behavior and parent relationship in adolescence. Past research has shown that the relationship between parents and their children get better as they move out of adolescence and into adulthood (Aquilino, 1997; Thornton, Orbuch, & Axinn, 1995). Positive behaviors must help facilitate a stronger relationship, however more in depth research needs to be done to understand how the relationship is affected.

The hypothesis that adolescents who engage in more positive behaviors are less likely to be arrested was not supported. An increase in negative behaviors is a better predictor of the likelihood to be arrested than positive behavior or age. This is supported by past research that shows that aggressive behaviors and parent reported conduct problems were strong predictors of being arrested in adulthood (Babinski, Hartsough & Lambert, 2003; Broidy et. al., 2003).

The hypothesis that adolescents who engage in more positive behaviors would use fewer drugs during young adulthood was not supported by the analysis. This result, like the effect of behavior on drug use during adolescence, may be due to lack of variability between answers. The only positive relationship found was between age and diet pills - which is an interesting finding to be examined in another study. The hypothesis that adolescents who engage in more positive behaviors would drink less alcohol in young adulthood was supported. This research supports a pattern of lower alcohol consumption is seen in adolescence who engage in more positive behavior. The increase rate of alcohol consumption among these young adults may be due to two different reasons. The first explanation is the age of the participant, which was found to have a very strong positive relationship with alcohol use in young adults. Many of the participants who did not drink before they reached the legal drinking age may begin to do so

once they reach 21, explaining the increase in alcohol use. The second explanation may be the environment that the participant is in. Past research has shown that there is a substantial increase in alcohol consumption for undergraduate college students (Schulenberg, Wadsworth, O'Malley, Bachman, & Johnston, 1996).

Limitations

While this study has important implications for understanding how adolescent behaviors influence educational expectations, the relationship between the adolescent and their parents and the affect of these behaviors on the transition to adulthood, there are some important limitations to note. The lack of variability within three of the included measures is a concern for this study. There is little variation between the adolescent's school expectations, their reports of their relationship with their parent and the parent's report of their adolescent's positive behavior. The lack of variability raises concerns that these are valid measures of positive behaviors, school expectations and the relationship between adolescents and parents.

The second limitation of this study was the low reliability of the extra-curricular activities scale. While reliability was low, it may not have caused an issue with the research. The activities listed on the questionnaire are all very different from one another, for example attending a church group and being involved in a sports team. These differences may be the cause of the low reliability. However, the activity itself was not the concern of this study. It was the total time spent in extra-curricular activities that were examined, therefore the low reliability should be less problematic for the results.

Future Research

Future research should expand upon this study by including more measures of parent-adolescent relationship, positive behaviors and educational expectations. It would also be

valuable to include reports from the adolescent's teachers and peers. This information can then be used to create prevention programs that target adolescents who are at the highest risk of alcohol consumption, drug use and negative adult outcomes. Also, creating a scale that accurately determines positive and negative behavior can help researchers follow changes in behaviors across time and pin point psychosocial influences on behavior. Once these influences are determined school, non-profit organizations and communities will be able to implement prevention measures to decrease consequences of adolescent negative behavior.

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I would like to thank my mentor, Dr. Pamela Davis-Kean, for being such a wonderful mentor and giving me great advice on more than just research. It was such an honor to work with you. Also, thank you to the Family, Culture and Development lab for being so supportive and helpful. Finally, I would like to thank my parents and wonderful son, Holden.

Table 1

Time use in adulthood and adolescent behavior and age

	B	S.E. B	β	T
Arts				
Positive Behavior	.24	1.87	.08	.92
Negative Behavior	.02	.02	.08	.85
Age	-.21	.10	-.15	-2.09
Sports				
Positive Behavior	.02	.25	.01	.07
Problem Behavior	-.01	.02	-.03	-.27
Age	-.23	.10	-.18	-2.37*
Social Action Groups				
Positive Behavior	.07	.06	.06	1.09
Negative Behavior	-.01	.01	-.04	-.76
Age	.01	.03	.02	.51
School Clubs				
Positive Behavior	.40	.27	.16	1.50
Negative Behavior	.03	.02	.14	1.24
Age	-.01	.09	-.01	-.11
Volunteering				
Positive Behavior	-.21	-.20	-.10	-1.10
Negative Behavior	.01	.02	.02	.2
Age	-.01	.07	-.01	-.14

*Note. *p = .05*

Table 2

Drug use by adolescent behavior and age

	B	S.E. B	β	T
Diet Pills				
Positive Behaviors	.02	.16	.01	.10
Negative Behavior	.02	.01	.08	1.50
Age	.17	.07	.10	2.60**
Amphetamines				
Positive Behavior	-.05	.06	-.50	-.90
Negative Behavior	-.01	.01	-.06	-1.11
Age	.03	.02	.05	1.19
Marijuana				
Positive Behavior	-.09	.12	-.04	-.74
Negative Behavior	.01	.01	.06	1.18
Age	.03	.05	.03	.72
Cocaine				
Positive Behavior	-.01	.02	-.04	-.70
Negative Behavior	.01	.01	.03	.50
Age	-.01	.01	-.01	-.30
Tranquilizers				
Positive Behavior	.01	.03	.03	.55
Negative Behavior	.01	.01	.08	1.53
Age	.01	.01	.04	.93
Steroids				
Positive Behavior	.01	.01	.04	.73
Negative Behavior	.01	.01	.05	.90
Age	.01	.01	.06	1.40

Note. ** $p = .01$