THESIS

INTENTIONS FOR POSTSECONDARY EDUCATION:

MEANING IN LIFE, SCHOOL CONNECTEDNESS, AND SUBSTANCE USE

Submitted by

Arissa R. Fitch-Martin

Department of Psychology

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Master's Committee:

      Advisor: Bryan Dik
      Co-Advisor: Michael Steger

      Kimberly Henry
      Lise Youngblade

ABSTRACT

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Attempts to understand what drives some youth to continue their education after high school have mostly been unsuccessful. Persisting education past high school requires sustained commitment and planning, which are theoretically important functions of the psychological construct of meaning in life. Research often has ignored the role that meaning in life plays in educational attainment and thus may be missing an important variable. Youth who report having meaning in their lives have higher well-being, are more resilient, and are more likely to report long-term achievement oriented goals. The current study investigated the relationship between meaning, school connectedness and substance use in order to create a model to better explain college aspirations 12th graders. Participants were seniors in high school and took part in the nationally representative Monitoring the Future project. Structural equation modeling was used to assess the hypothesized model. Results demonstrated that school connectedness and parental education are significant indicators of intentions for postsecondary education. Although not directly related to academic intentions, meaning in life had strong ties to school connectedness and parental education.   The current study provides evidence that meaning in life may be an important factor in academic success and persistence. Implications for interventions and future research are discussed.

ACKNOWLEDGEMENTS

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Chapter I: Introduction

Postsecondary education is considered to be an important stepping stone toward a successful future. Although college enrollment rates in the United States have risen steadily over the last two decades, recent data indicate the enrollment rate to be just 39% (U.S. Department of Commerce, 2008). Completion of a college degree increases job prospects and salary (Pascarella & Terenzini, 2005), and decreases risk of unemployment (U.S. Bureau of Labor Statistics, 2010) and criminal activity (Belair & Rescigno, 2003). Beyond these more obvious benefits, attending college is also indicative of psychosocial and moral development, increased cognitive ability (Pascarella & Terenzini, 1992) and a greater likelihood that one's offspring will attend college as well (U.S. Department of Education). The long-term implications of increasing enrollment in postsecondary education spread beyond the individual gains to benefit society and future generations. Given the substantial advantages, it is concerning that a majority of individuals in the U.S. do not obtain a postsecondary education.

Since President Lyndon B. Johnson's *Higher Education Act of 1965* there has been widespread recognition of the importance of postsecondary education resulting in the development and implementation of programs intended to address the issue. Schultz and Mueller (2006) reviewed the literature and identified those programs which have demonstrated the most effectiveness in increasing college enrollment. According to the authors, the components of a successful program include academic preparation, parental involvement, systematic reform, and academic, social, financial and long-term support. In all, the review included twenty programs that had been sufficiently evaluated and concluded that only six reached the promising level of effectiveness. Furthermore, several of the programs included many of components indicative of success but did not produce adequate results. For example,

Project Graduation Really Achieves Dreams (Project GRAD) incorporates academic enrichment and rigor, comprehensive support, and a financial incentive but an evaluation of five project sites concluded that the program did not have a unique impact on student success.

Given the variation in program components and lack of rigorous evaluations, it is difficult to parse out the key indicators of college enrollment. Furthermore, the majority of programs that have been implemented specifically target students who have academic promise and are part of an underrepresented group (Schultz and Mueller, 2006). Despite small gains made by some of these individual programs, the continued low college enrollment rates across all groups clearly indicates that more efforts need to be made.

One direction to take in addressing this issue is to explore factors that are absent in most of the attempts to increase college enrollment. Given that substance use is considered to contribute to high school dropout rates (see Townsend, Fisher, and King, 2007) its effects on postsecondary education are important to consider. Graduating high school is an important step towards enrolling in college and yet both achievements often are treated as separate issues in the literature. Few studies have looked at the relationship between substance use and college aspirations and further knowledge on their direct relationship is needed. Another factor that has not been explored in this regard is meaning in life. Persisting in education past high school requires sustained commitment and planning, which are theoretically important functions of the psychological constructs of meaning in life. Meaning in life has emerged as a possible key factor in human development and success (Schwartz, Côte, & Arnett, 2005; Burrow and O'Dell, 2010) but it has yet to be considered in the literature on postsecondary education.

The purpose of this study was to investigate meaning in life and substance abuse as indicators of college aspirations. School connectedness, an important factor of academic success

and often a target for dropout prevention programs, was included as well. Together, the relationship between meaning in life, school connectedness, and substance abuse was examined to create a model that might better explain intentions for postsecondary education.

Meaning in Life

Meaning in life has been established as an important piece of overall well-being (Ryff & Singer, 1998) and happiness (French & Joseph, 1999). The presence of meaning in life is thought to be determined by subjective criteria based on the individual's sense that his or her life has purpose and significance (Steger, Frazier, Oishi, Kaler, 2006). The distinction between purpose and significance is subtle but critical within the theoretical construct of meaning in life. Purpose refers to identifying an overarching, and personally relevant, aim for one's life and significance is the cognitive understanding of what one's life means (Steger, 2009). Together they define meaning in life as the degree to which people make sense of how they fit in the world and to what extent they see themselves as having an overarching mission or goal in life (Steger, 2009).

With the increased attention on the concept of meaning in life, scholars and researchers have begun to explore how it is experienced at earlier stages of life. Research on adolescents has indicated that meaning in life is associated with positive psychological indicators, such as well-being (Burrow & O'Dell, 2010), life satisfaction (Bronk, Lapsey, Talib, & Finch, 2009) and resiliency (Bernard, 1991; Masten & Reed, 2002). The salience of meaning in life during this stage is plausible given that it has important ties to development and identity formation (Schwartz, Côte, & Arnett, 2005; Burrow and O'Dell, 2010). Theorists, such as Erikson (1968), have proposed that adolescence is a time period of self exploration during which individuals begin to discover who they are and what they want to become. Substantial research has

supported the theory that establishing meaning in life is a core component of adolescent identity development (Damon, Menon, & Bronk, 2003; Schwartz, Coˆte, & Arnett, 2005; Burrow & O'Dell, 2010; Kiang & Fulignu, 2010). Emmons (1999) further suggested that the meaning in life that is identified at this time has a strong potential to influence adolescents' aspirations and life trajectories. In other words, establishing meaning in life involves making sense out of one's role in the world and identifying an overarching purpose from which smaller goals are set in order to fulfill that purpose. Given this, there seems to be a critical interplay between meaning in life and identity development that occurs during adolescence that could potentially impact the direction that one's life takes, such as whether or not a person continues her education after high school.

Following the definition of meaning in life described above, youth who lack purpose also lack meaning in life. In turn, these youth may see no reason to obtain a post secondary education and thus struggle to identify and obtain goals, such as maintaining a high grade point average. The theoretical tie between meaning in life and future aspirations may be easily understood but the specifics of the relationship have yet to be explored. Goals are organized hierarchically with future aspirations being larger more abstract goals that are achieved through a series of smaller subsequent goals (Broadbent, 1977; Powers, 1973; Vallacher & Wegner, 1987). Thus, in order to understand the relationship between meaning in life and future aspirations, it is important to review what is known about purpose and goals.

Purpose, like meaning in life, has been identified as an important element for optimal youth development (Damon, 2008; Benson, 2006). For example, Schwartz and colleagues (2005) reported that youth who have a sense of purpose are more likely to engage in more deliberate individualization by seeking out opportunities for personal enhancement, while those

with less of a sense of purpose tended to be more passive and accept whatever opportunities were given to them. This has strong implications for future aspirations and specifically for career development; youth who have purpose or meaning in life may be more likely to take deliberate steps towards their future goals.

While having purpose may result in positive outcomes, it is relatively common for adolescents to lack clear direction and purpose when they are younger. Bronk et al. (2009) described these youth as "drifting," meaning that they were not actively engaged in purposeful goals or had low-levels of intention. Youth who engage in higher levels of exploration during this time are more likely to have higher purpose commitment as they get older (Burrow and O'Dell, 2010). It would not be surprising to find that meaning in life and exploration facilitate one another. Encouraging youth to engage in exploration in order to find meaning will likely help them form stronger identities and take a more active approach to their future goals.

Nurmi (2004) described goal setting as being a process shaped by previous learning experiences, individual characteristics, and environmental factors that either help or hinder reaching those specific goals.   For adolescents, this goal setting process is a part of a cycle of identity formation. The cycle consists of the current self-concept influencing outcome expectations and goal setting and, in turn, attainment of those goals influences the self-concept (see Cantor & Kihlstrom, 1987; Markus & Nurius, 1986; Nurmi, 2001; Stein, Roeser & Markus, 1998). For example, adolescents who reach their goals feel more efficacious and are more likely to continue setting goals for themselves. Both setting and attaining goals are thought to satisfy the need that humans have to feel autonomous and competent (Ryan, Deci, & Grolnik, 1995; Deci & Ryan, 2000; Skinner & Wellborn, 1994).

Research has supported that having and reaching goals is a positive endeavor for youth to undertake. Identifying personal goals is associated with academic success (Oyserman, Bybee, & Terry, 2006) and well-being in youth (Massey, Gebhardt, & Gamefski, 2008). There also is evidence that the specific content of goals is related to various positive outcomes. Greater educational goal endorsement has been associated with lower risk behaviors in boys (Somers & Gizzi, 2001), lower perceived acceptance of adolescent pregnancy (Mirza & Somers, 2004), higher self-efficacy (Vrugt, Oort, & Zeeberg, 2002), and higher self-esteem (Nurmi & Pulliainen, 1991). Other goal content may be indicative of poor outcomes. For example, materialistic goals have been associated with poor adjustment and low well-being (Csikszentmihalyi, 1999; Kasser & Ryan, 1993, 1996). Youth who report extrinsic goals such as wealth, fame, and image are more likely to smoke (Williams, Cox, Hedberg, & Deci, 2000) and lead more sedentary lifestyles (Piko & Keresztes, 2006). On the other hand, youth who identify more altruistic goals, such as helping others or supporting their families, are more likely to identify overall purpose in their lives and meaning in their academic studies (Yeager & Bundick, 2009). Studies that have looked at goals as the independent variable have found that delinquent boys are less likely to exhibit persistent goal pursuit (Oyserman & Saltz, 1993) while delinquent girls report less health and educational goals (Carroll, 2002). In general, delinquent youth identify and commit to goals but those goals are more immediate or short term, such as being with friends and having fun (Carroll, 1995). In turn, delinquent youth often find themselves in a perpetuating cycle of short-term, non-achievement oriented goals leading to further delinquent behavior (Massey et al., 2008). This evidence further supports the idea that adolescence is a crucial time during which cultivating meaning in life can have a significant impact on goal formation and the subsequent path that life takes.

Youth who have low psychological well-being are also at risk of forming non-achievement related goals or of failure to attain their goals. For example, Dickson and Macleod (2006, 2004) reported that adolescents who are depressed have less perceived control over the pursuit of their goals, identify more barriers to their goals, and are less specific in the content of their goals. Although the proposed study will not address youth psychological wellbeing directly, it is beneficial to have a global understanding of variables related to goals and future aspirations as increasing educational and occupational goal attainment will likely impact these related variables.

According to an extensive review of the literature by Massey, Gedhardt, and Garnefski (2008), education and occupational goals are the most common goals identified by adolescents. School or educational goals tend to increase towards middle adolescence (15 years old) and then decrease in later adolescence while occupational goals have been shown to increase after later adolescence (Lanz & Rosnati, 2002). Yeager and Bundick (2009) found that 98% of 6th, 9th and 12th graders surveyed reported that a job was one of the most important things to them in life. While adolescents are able to identify the general content of their goals, such as education or occupation, they vary in how specific their particular goals are and how engaged they are in pursuing those goals. Older youth tend to be more active in making plans for and taking steps toward attaining their goals (Nurmi & Pulliainen, 1991) and are more confident that those goals will be reached (Nurmi, 1994). Given this information and the low college enrollment rates there seems to be a disconnect between making and attaining these goals. Additional exploration is needed in order to understand what is missing for youth who do not reach their educational goals or do not make them in the first place.

The discussion up to this point has focused on the role that meaning in life plays in adolescent development and its potential influence on future aspirations. Although the theoretical ties to educational goals have been suggested, to date there is little to no empirical evidence to support the theory. However, research has shown robust relationships between meaning in life and the two other key indicators of postsecondary educational aspirations, substance abuse and school connectedness.

Substance Use

A limited number of studies have considered the relationship between substance use and college aspirations. Those that have included these factors demonstrated a negative relationship between the two (Bachman et al., 2008; Kirk, Lewis, Lee, & Stowell, 2011; Brook, Adams, Balka & Johnson, 2002; Messerstmith, 2008). Due to the general dearth of information on the relationship between high school substance use and college aspirations, stronger support for the connection can draw on the high school dropout literature. The rationale for this is that students who do not graduate from high school are significantly less likely to continue with their education. Only about a quarter of all dropouts end up enrolling in post secondary education, including those who obtained their diploma or GED after initially dropping out of high school (U.S. Department of Education, 1998). In the same year, nearly half of all high school graduates enrolled in a post secondary education program (U.S. Department of Commerce, 2008). Because of the sometimes inconsistent definition of a "dropout," caution should be used in comparing high school dropouts to those who do not go on to college. However, drawing on this comparison provides potentially valuable information regarding those who do not aspire to go to college.

Dropping out of high school and substance use are both forms of deviant, or antisocial, behavior and several theories have been proposed to explain why one often goes with the other (see Townsend, Fisher, & King, 2007 for a review). Social control theory (Hirschi, 1969) posits that social constraints act to control normative behavior and that delinquent, or non-normative, behavior results when the social bond is weakened. The delinquent behavior can come in the form of substance abuse (Fagan & Pabon, 1990) and less involvement in social groups, such as school (Townsend, Fisher, & King, 2007). The point of contention in this theory is its emphasis on social bonds with some empirical evidence to support its role (Battin-Pearson et al., 2000; Fagan & Pabon, 1990) and some to refute it (e.g. Aloise-Young & Chavez, 2002).

Problem-prone behavior and general deviancy theory has had more consistent support. The theory views substance abuse and high school dropout as part of a collection of delinquent behaviors that are exhibited by non-conforming adolescents (Jessor, 1987). Because the adolescents themselves have non-conforming attitudes and beliefs they tend to engage in non-conforming behaviors. Several studies have demonstrated that delinquent behaviors don't tend to present themselves in isolation and instead are company to several other delinquent behaviors such as use of multiple substances, dropout, mental health problems, and early sexual involvement (Fergusson et al. 1996; Fergusson and Horwood 1997). As completing high school can be viewed as a norm-consistent behavior, intentions to go to college can be considered a norm-consistent attitude. The expectation for people to attend at least some college has become increasingly the norm (National Center for Education Statistics, 2008), going against this norm can be considered antisocial in nature and thus is more likely to be paired with other delinquent behaviors.

In general, there has been consistent empirical support of a strong relationship between substance use and high school dropout (see Townsend, Fisher, & King, 2007). Multiple substances users are more likely to drop out of high school (e.g. McClusky et al., 2002; Register, Williams, & Grimes, 2001). This effect has also been shown with single substances such as nicotine (Ellickson, Bell, & McGuigan 1998; Gfroerer, Greenblatt, & Wright, 1997), alcohol (Aloise-Young & Chavez 2002; Arellano, Chavez, & Deffenbacher, 1998; Fagan & Pabon 1990; Flisher & Chalton 1995; Wichstrøm 1998; Zimmerman & Maton 1992), and marijuana (Gfroerer et al. 1997). Longitudinal studies have also shown that substance use predicts high school dropout (Ellickson, Bell, & McGuigan, 1998; Fergusson & Horwood 1997; Fergusson, Horwood, & Beautrais 2003: Fergusson, Lynskey, & Horwood, 1996). The evidence suggests that not only do youth tend to exhibit multiple problem behaviors but that one (e.g. substance use) may have a causal role in the appearance of another (e.g. high school dropout).

In addition to high school dropout, substance use has been tied to lower academic achievement, such as lower grades and higher truancy rates (Swadi, 1992; Pritchard, Cotton & Cox, 1992; Thomas & Hsiu, 1993; Thomas, 1993; Miller & Miller, 1997; Miller and Plant, 1999; Oman et al., 2002; Bryant and Zimmerman, 2002; Roebuck, French & Dennis, 2004; Hallfors et al., 2002). Although these students may still obtain a high school diploma, low attendance and grade point averages make them less competitive for getting into college suggesting that substance use may function as a barrier to postsecondary education at multiple intervals.

School Connectedness

School connectedness is closely tied to college aspirations and has been linked to several indicators of academic persistence. School connectedness, also referred to as school engagement, has been defined in several different ways. These different definitions have driven

the development of different measurement approaches. The construct can include student compliance to school rules, motivation to learn, academic commitment, and the extent to which the student feels accepted and supported by others at school (Libbey, 2004). Since adolescence is often the stage in which youth begin to seek more autonomy over their lives (Poncelet and Associates, 2004), some researchers have included it in their descriptions of school connectedness. Waters, Cross, and Runions (2009) define school connectedness as the degree to which students feel efficacious in their endeavors, bonded with adults and peers, and autonomous. Most definitions of school connectedness include one or more of the three dimensions (behavioral, affective, and cognitive) highlighted by Archambault, Janosz, Morizot, and Pagani (2009). The behavioral dimension includes student engagement in school activities, including school work, extracurriculars, and class discussions. This dimension also includes student compliance with school rules. The affective dimension covers student attitude, feelings, and perceptions towards school. Self-efficacy, motivation and effort to learn, and taking steps to make and reach goals all fall within the cognitive dimension. Archembault and colleagues (2009) point out that the majority of research does not consider the multidimensionality of school connectedness.

Students who are high in school connectedness report better current mental health and are more likely to continue to report better mental health into adulthood (Schochet et al., 2006). In a study of over 2,000 students in 8th grade, researchers found that students who identified high school connectedness and peer relationships were more likely to exhibit the most positive outcomes two to four years later (Bond, et al, 2007). The students who lacked school connectedness were more likely to suffer from anxiety, depressive symptoms and substance abuse, regardless of whether or not they had good peer relationships (2007).

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Beyond mental health outcomes, studies have found that students with a high level of school connectedness are more likely to attend school regularly, achieve more academically, and smoke and drink less (Anderman, 2002; Resnik and Bearman, 1997; Resnik, Harris, and Blum, 1993). Archambault and colleagues (2009) found that all the students within their study who were highly motivated in school avoided breaking the rules. Thus school connectedness impacts the extent to which students are successful academically and are positive contributors to society.

In general, school connectedness appears to be strongly linked with healthy and adaptive decision-making. In fact, school connectedness has been directly related to more physical activity and healthier diets (Carter, McGee, Taylor, and Williams, 2007). Increasing student school connectedness has the potential to have a profound and long-lasting effect on multiple dimensions from physical and mental health to academic achievement. Based on the positive impact on these multiple dimensions, school connectedness is likely to translate to fulfilling future aspirations and continued success.

Relationship Between the Variables

Substance use often is perceived as being in conflict with goal attainment (Henry, Swaim, & Slater, 2005; Slater, 2003) suggesting that youth who have identified an overarching purpose to their lives, and thus experience meaning in life, would be less likely to engage in substance use. Several studies have found that meaning in life is associated with less engagement in risk behaviors such as teen pregnancy (McCabe & Barnett, 2000) and substance use (Thege, Bachner, Kushnir, & Kopp, 2008). In a recent study, Brassai, Piko, and Steger (2010) suggested that meaning in life may serve as a buffer against making choices that may harm their physical and mental health. Youth in the study who had high levels of meaning in life were less likely to engage in risky behaviors such as substance use.

Meaning in life can also be tied with school connectedness in a couple ways. Identifying purpose and significance in schoolwork likely facilitates overall meaning in life. This relationship also could be reversed in that students with more meaning in their lives may be more likely to see the purpose in their schoolwork and continued education. In either case, students who acknowledge that school is meaningful are likely to be more motivated to engage in and make the most out of the experience. Damon (2009) found a positive correlation between meaning in life and academic achievement motivation. The two constructs could also be connected through the cognitive dimension of meaning in life. Understanding personal fit in the world aids people in feeling connected to life in general and to each piece of their lives specifically, school being one of those pieces. Meaning in life and school connectedness have also shared many correlates in the research such as psychological health (French & Joseph, 2009; Schochet, Dadds, Ham, and Montague, 2006) and less substance use (Aloise-Young, Hennigan, & Leong, 2001; Resnik, Harris, & Blum, 1993), further strengthening the possible relationship between the two.

A note about other variables

An extensive body of literature on high school dropout and postsecondary aspirations has focused on prosocial involvement and extracurriculars. Participation in structured activities such as through school sports, church, and academic clubs increases academic achievement (e.g. Broh, 2002; Crosnoe, 2001; Eccles & Barber, 1999) and college enrollment (Marsh & Kleitman, 2003). Several studies have suggested that the mechanism is found in the increased levels of school connectedness that results from involvement in these activities (Brown & Evans, 2002; Calabrese & Poe, 1990; Hendrix, Sederberg, & Miller, 1990; Jenkins, 1997). As it may be

influencial, involvement in extracurricular activities should be included when evaluating intentions for postsecondary education.

Intentions for postsecondary education may be impacted by demographic factors as well. There is substantial support that socioeconomic status, most often measured by family income, parents' education, and parents' occupation, has a significant impact on college aspirations either directly or indirectly (see Breen & Johnson, 2005 for a review) and may be more significant than other demographic factors, such as race/ethnicity (Bender & Ruiz, 1974; Hodgkins & Parr, 1965; Howell & Frese, 1979; Kerckhoff & Campbell, 1977a; Solorzano, 1992). A key variable within SES may be parent education. Several studies have demonstrated that parent education predicts children's academic achievement (e.g. Klebanov, Brooks-Gunn, & Duncan, 1994; Haveman & Wolfe, 1995; Smith, Brooks-Gunn, & Klebanov, 1997). Evidence has suggested that the relationship could be due to several factors such as the parent's beliefs and expectations concerning postsecondary education (Alexander, Entwisle, and Bedinger, 1994; Davis-Kean, 2005; Halle, Kurts-Costes, & Mahoney, 1997) as well as their encouragement (Wu, 1993).

Studies also have examined the sex differences in college aspirations. Since the 1980s, the sex gap in educational attainment has become increasingly narrow and more women are considering higher education (Blackhurst & Auger, 2008; Danziger, 1983; Davis & Pearce, 2007; Dune, Elliot, & Carlsen, 1981; Farmer, 1983; Holms & Esses, 1988; Saltiel, 1985; Westaway & Skuy, 1984). Currently women are aspiring to and enrolling in college at equal rates as men (Blackhurst & Auger, 2008). Although progress has been made towards postsecondary education equality among the sexes, there still seem to be some differences in educational goal setting. Girls have been found to engage in greater exploration, exhibit stronger commitment (Nurmi et al., 1995), prioritize educational goals (Chang et al., 2006), and have

higher confidence in goal attainability (Malmberg & Trempala, 1997). On the other hand, boys are more likely to have more specific plans for attaining their goals and to consider possible obstacles for occupational goals (Yowell, 2000). Despite these results, an extensive review of the literature revealed mixed evidence concerning sex differences in goal content, with no conclusive evidence of significant differences (Massey et al., 2008). Still, the possibility that there are sex differences should not yet be pushed aside. The evidence that girls engage in more exploration should be taken into consideration with the earlier discussion that such exploration is often coupled with purposeful goals (Burrow & O'Dell, 2010) and that meaning in life requires identifying purpose (Steger, 2009).

The literature looking at substance use, school connectedness, and academic goals has also identified mixed results. For example, Sommers & Gizzi (2001) found that relationship between academic aspirations and risk behaviors was particularly salient for boys. In their review, Feldman and Matjasko (2005) noted that studies examining substance use and academic achievement reached different conclusions when examining single versus both sex samples.

In sum, the evidence clearly suggests that parent education and extracurricular activities are strongly related to postsecondary education. What is much less clear is whether or not sex plays a significant role. Although males and females are aspiring to higher education at equal rates, some research suggests that the process through which they come to identify these aspirations may be different. This uncertainty indicates that further research is needed before conclusions about sex differences in the relationship between meaning in life, school connectedness, substance use and postsecondary intentions can be made.

Chapter II: The Current Study

Purpose

Correlates of school connectedness, substance use, and meaning in life among youth have been investigated. Studies have examined the relationship among pairs of these variables, such as between school connectedness and substance use, but no study to date has explored how all these variables function together. Nor has research considered how these variables are related to college aspirations. The current study also adds the construct of meaning in life to the equation. No study has included the meaning in life item from the particular dataset that will be used for this study and, in general, meaning in life for youth often has been ignored. School connectedness has been demonstrated to be an important factor of school retention at the high school level, but its relationship with events after high school graduation has been given little attention.

The current study aimed to provide a better understanding of the relationship between meaning, school connectedness, substance use, and college aspirations of adolescents while also considering the effects of parent education and extracurricular activities. A better understanding of the factors that affect the decision to attend college above and beyond parent education may shed light on how to increase enrollment rates and better ensure the future success of our youth.

A secondary aim of this study was to explore how these variables may function differently for males and females. There is some evidence of sex differences in these areas, such as substance and school connectedness, but not enough to warrant any predictions. For this reason, the current study aimed to provide an exploration of these variables in a sex-specific context to better understand their interaction among females and males.

Hypotheses

Research has demonstrated that identifying meaning in life is related to greater school connectedness, extracurriculars, and achievement goal setting in adolescents. It has also been demonstrated that adolescent students who are more engaged in school identify stronger academic goals. Lastly, parent education and participation in extracurricular activities have demonstrated positive relationships with school engagement and the pursuit of higher education.

H1: There will be direct positive relationship between the following variables: meaning, school connectedness, postsecondary aspirations, extracurricular activities, and parent education.

School connectedness, meaning in life, extracurricular activities, parent education, and constructive goal setting have been independently linked to decreased use of substances among adolescents.

H2: There will be a direct negative relationship between substance abuse and all other variables.

A visual representation of the hypothesized model is demonstrated by Figure 1.

Methods

Participants. The current study used data from Monitoring the Future: A Continuing Study of American Youth, 2003, conducted by the University of Michigan's Institute for Social Research. The project started in 1975 in the United States and has since collected annual nationwide data from approximately 130 middle and high schools. This study used data from the 2003 12th grade data set for two reasons: 1) it includes the meaning in life item and 2) the academic expectations reported by 12th graders are more reliable (Sciarra & Ambrosino, 2011; Trusty, 2000).

Instrument. The Monitoring the Future survey covers a wide variety of topic areas from substance abuse to leisure activities. Specific items on the survey can vary from year to year but the majority of the content remains the same. The scales and variables for this study are defined as follows:

Meaning in life. Meaning in life was measured by a single item that asks participants to report how much they agree or disagree with the statement: "life often seems meaningless." The item is scored on a five-point continuous scale (1 = *disagree*, 2 = *mostly disagree*, 3 = *neither*, 4 = *mostly agree*, 5 = *agree*). The item was reversed scored so that a high score will indicate a high level of meaning in life.

School connectedness. The school connectedness scale was comprised of ten items. These items cover affective, cognitive and behavioral dimensions of school connectedness suggested by Archambault, Janosz, Morizot, and Pagani (2009). Examples of items and the corresponding dimension are: "how often do you feel that the school work you are assigned is meaningful and important" (affective), "...find school work too hard to understand" (cognitive), and "fail to complete or turn in assignments" (behavioral) (see Table 1 for a complete list of the items). Items were either rated on one of two 5-point scales (e.g. 1 = *never* and 5 = *always* or 1 = *very important* and 5 = *not at all important*) or a 4-point scale (1 = *quite interesting* and 4 = *very dull*). An additional item asked participants to indicate their average grade over the last year (1 = *D* and 9 = *A*). Three items were reverse coded. The scale scores demonstrated adequate internal consistency, with a Cronbach's alpha of .78.

Substance use. Six items were chosen for the substance abuse measure and included questions about cigarettes, marijuana, and alcohol use. These three substances were chosen because they are the most prevalent among seniors in high school (National Institute on Drug

Abuse, 2011). One item asks "Have you ever smoked cigarettes" and responses include 1= *never*, 2 = *once or twice*, 3 = *occasionally but not regularly*, 4 = *regularly in the past*, 5 = *regularly now*. The remaining questions ask about use in the last 30 days and in the last twelve months of each of the three substances. The responses were on a 7-point scale (*0 occasion*s, *1-2 occasions*, *3-5 occasions*, *6-9 occasions*, *10-19 occasions*, *20-39 occasions*, and *40 or more occasions*). Items were summed and the scores demonstrated a Cronbach's alpha of .89.

Intentions for postsecondary education. College aspirations were measured using four separate items. The items ask "How likely is it that you will do each of the following things after high school?": "Attend a technical or vocational school," "Graduate from a two-year college program," "Graduate from college (a four-year program)," "Attend graduate or professional school after college." Response options for these items were 1 = *definitely won't,* 2 = *probably won't,* 3 = *probably will, and* 4 = *definitely will*. This study was interested in level of intention to attend postsecondary education, rather than degree. In order to best capture this, a separate variable was created using the maximum score indicated across the four items.

Parent education. Parent education was be measured by taking the average of two items, one specifying mother's education level and one specifying father's. The item reads "What is the highest level of schooling your (mother/father) completed?". Response options are 1 = *completed grade school or less,* 2 = *some high school*, 3 = *completed high school*, 4 = *some college*, 5 = *completed college*, 6 = *graduate or professional school after college*, 7 = *don't know, or does not apply.* Seven was treated as missing data.

Extracurricular Activities. Seven variables measuring participation in activities such as volunteering, sports, religious services and clubs were selected. For the question "How often do you attend religious services" responses included 1 = *never,* 2 = *rarely,* 3 = *1-2 times per month*

and 4 = *once a week or more.* The response options 1 = *never,* 2 = *a few times a year,* 3 = *1-2 times per month,* 4 = *once a week,* and 5 = *nearly every day* were given for "How often do you actively participate in sports." Finally, items "To what extent have you participated in…school newspaper or yearbook, music or performing arts, athletic teams, academic clubs, student council or government" were rated as 1 = *not at all,* 2 = *slight,* 3 = *moderate,* 4 = *considerable,* and 5 = *great extent*. A separate variable was created by taking the mean of these items.

Procedure

Schools were selected to participate in Monitoring the Future through a multistep process (Johnston, Bachman, & O'Malley, 2003, see also www.monitoringthe future.org). Geographic areas designated by the Sampling Section of the Survey Research Center were the primary sampling units. Within these geographic areas schools were sampled with the likelihood of a school being sampled proportionate to its size. A maximum of 400 seniors were randomly selected within each school and sampling weights were applied to each respondent to account for unequal sample sizes as well as the variation in earlier selection probabilities.

Once consent from the schools was obtained a representative from the Survey Research Center (SRC) coordinated surveys administration. The teachers announced the study to the students and were instructed to emphasize that it is a survey and not a test. A flyer was given to the students that detailed the study, stressing that it was voluntary and confidential. The surveys were then administered by the local SRC representative during normal class time. The teachers were present but were asked to not wander around the room to reduce the chances that the students felt their answers may be discovered. The survey took approximately 45 minutes to complete.

Some concern is raised over the validity of self-report data, especially concerning sensitive topics such as substance abuse. Several factors indicate that that the responses used in this study are largely valid. For example, findings have been consistent across several years of the study, findings from other methodological studies that have used objective validation methods, the relationships between variable indicate strong construct validity, and the findings are similar to those from other studies using different methods (Johnston, Backman, O'Malley, & Schulenberg, 2003).

Statistical Analysis

Structural equation modeling (SEM) using EQS 6.1 for Windows (Bentler, 2005) was used to test the hypothesized model. This type of path analysis is able to simultaneously test the relations of the variables as well as identify direct and indirect effects, the corresponding standard errors, and produce indices of overall model fit. Assumptions were evaluated through SPSS and EQS. Missing data on the study variables ranged from .4-7.1%. Individual item skew and kurtosis demonstrated that univariate normality was violated and Mardia's Normalized coefficient ranging from 23.091 to 97.36 ($p < .001$), for measurement and structural models, indicated significant multivariate kurtosis. However, the standardized residuals were normally distributed and did not exceed .214. Additionally, it is reasonable to expect that several of the variables would be skewed in the normal population (e.g. most adolescents do not use drugs). Under these circumstances SEM is able to make adjustments to account for these issues in the data, in lieu of transformations. To best handle issues incomplete data and non-normality, maximum likelihood (e.g. Arbuckle, 1996; Bentler, 2006) with robust estimation was used. The robust estimation produces the Satorra-Bentler scaled chi-square (Satorra& Bentler, 1988) and adjusts standard errors to the extent of nonnormality (Bentler & Dijkstra, 1985).

Chapter III: Results

Model fit was assessed through the recommended two-step procedure (Anderson & Gerbing, 1988). First, a measurement model for each of the latent variables was tested with all relevant paths left free to vary. Once adequate fit was established for the measurement model, the hypothesized structural path model was tested wherein all hypothesized paths shown in Figure 1 were estimated freely. Modification indices identified significant areas of model misfit, and, when substantiated, the model was adjusted accordingly and re-estimated. Model fit was assessed by the comparative fit index (CFI) and the root-mean-square error of approximation (RMSEA). CFI values greater than .95 and RMSEA values less than .06 are indicative of reasonably good fit (e.g., Hu & Bentler, 1999; Kline, 2005).

Description of the Sample

The data set used included 2,551 participants, 141 of those were excluded from this study due to missing data on all the items used to measure intentions for postsecondary education. Of the sample used for the current study, 65.7% were White/Caucasian, 12% Black, and 46.3% male. Correlations between all study items can be found in Table 3 in the appendix. Means and ranges of the primary study variables for the full sample as well as for each sex can be found in Table 2. T-tests demonstrate significant differences between males and females in four of the variables (see Table 2). Females reported higher school connectedness ($p < .001$) and intentions for postsecondary education ($p < .001$). Males reported higher drug use ($p < .001$) and parental education ($p=.01$).

Multigroup models: Males versus Females

In order to compare a structural model between two groups it is important to first establish that the latent constructs are being measured similarly across the groups. This requires a multistep process beginning with establishing a best fitting model for each group independent

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of the other. Once adequate fit is established the model is estimated on the two groups

simultaneously and measurement invariance is assessed by constraining parameters of interest to

be equal.

Beginning with the male sample, the initial single factor model for school connectedness

demonstrated poor fit (S-B X^2(35) = 1345.912, $p < .001$, $CFI = .565$, $RMSEA = .189$).

Constraining the parameters to fit the hypothesized three-factors (behavioral, affective, and

cognitive) resulted in significant improvement in, but still mediocre, fit (S-B X^2(32) = 424.72, $p <$

.001, $CFI = .87$, $RMSEA = .108$). As in the full sample model, the addition of the path between

the residuals of "I hate school" and "I enjoy school" was recommended. The path was added and

model fit improved further (S-B X^2(31) = 188.55, $p < .001$, $CFI = .948$, $RMSEA = .07$). In order

to reach satisfactory fit levels the model was re-examined for additional areas of significant mis-

fit. Following recommendations, a path between the behavioral item "fail to complete

assignments" was allowed to cross-load on to the cognitive factor. The model with these

additional parameters fit the data well (S-B X^2(30) = 121.68, $p < .001$, $CFI = .97$, $RMSEA =$

.054).

The latent factor for substance use was then assessed using the male sample. The

baseline model allowed each item loaded onto a single factor which resulted in poor model fit (S-

B X^2(9) = 1065.29, $p < .001$, $CFI = .635$, $RMSEA = .337$). Next, the hypothesized three factor

model was tested by constraining items to load only onto their respective factor (cigarettes,

alcohol, and marijuana). This adjusted model resulted in improved, but still less than desirable,

fit for substance use (S-B X^2(6) = 30.17, $p < .001$, $CFI = .992$, $RMSEA = .062$). The modification

indices suggested the significant misfit between the error terms for alcohol use in the last year

and frequency of cigarette use, as demonstrated in the full model. Allowing these residuals to covary resulted in excellent model fit (*S-B X*^{2}(5) = 16.87, *p* < .001, *CFI* = .996, *RMSEA* = .048).

Given good measurement model fit the full structural model was then estimated with the male sample. Results indicated good fit (*S-B X*^{2}(150) = 354.80, *p* < .001, *CFI* = .968, *RMSEA* = .039) and no changes were made to the model.

The same process was then followed with the female sample. The single factor model for school connectedness demonstrated poor fit (*S-B X*^{2}(35) = 1698.89, *p* < .001, *CFI* = .484, *RMSEA* = .20). Estimating the data with the three-factor (behavioral, affective, and cognitive) model resulted improved but unacceptable fit (*S-B X*^{2}(32) = 461.09, *p* < .001, *CFI* = .867, *RMSEA* = .106). Again, significant misfit was identified in the absence of a path between the residuals of "I hate school" and "I enjoy school". The path was added and model fit improved to acceptable levels (*S-B X*^{2}(31) = 154.68, *p* < .001, *CFI* = .962, *RMSEA* = .058) and no further modifications were made.

The single factor model for substance use demonstrated poor fit with the female sample (*S-B X*^{2}(9) = 923.38, *p* < .001, *CFI* = .584, *RMSEA* = .293). The three factor model (cigarettes, alcohol, and marijuana) demonstrated better fit (*S-B X*^{2}(6) = 39.096, *p* < .001, *CFI* = .985, *RMSEA* = .068). As in previous models, the modification indices suggested the significant misfit between the error terms for alcohol use in the last year and frequency of cigarette use, as demonstrated in the full model. Allowing these residuals to covary nearly resulted in good model fit (*S-B X*^{2}(4) = 27.83, *p* < .001, *CFI* = .99, *RMSEA* = .062). Finally, the addition of the path between the error terms for alcohol and marijuana use in the last year, as recommended by the modification indices, resulted in excellent model fit (*S-B X*^{2}(4) = 27.83, *p* < .001, *CFI* = .995, *RMSEA* = .049).

The structural model, using the modified measurement models, was then estimated to the female sample. Results suggested excellent model fit ($S\text{-}B\ X^2(150) = 455.36$, $p < .001$, $CFI = .954$, $RMSEA = .044$).

With the establishment of good model fit in the independent samples a multi-group analysis was then conducted to determine measurement invariance. This stage of the process begins with running the full structural models simultaneously without constraining parameters to be equal. This configural model fit the data well ($S\text{-}B\ X^2(300) = 807.97$, $p < .001$, $CFI = .961$, $RMSEA = .042$). Equality constraints were then placed on all first and second order factor loadings to assess for measurement invariance in the latent factors. The constrained model demonstrated a good fit with the data ($S\text{-}B\ X^2(316) = 910.01$, $p < .001$, $CFI = .954$, $RMSEA = .044$). However, upon examination of the fit indices, misspecification was indentified in several of the constraints. In particular, release of the equality constraints between marijuana, alcohol, cognitive, and behavioral second order factors loadings was recommended. This suggests that those factors are operating differently between the sexes. Some argument has been made for evoking partial measurement invariance that still allows for comparisons between groups (Byrne, 2006). In order to do so two criteria must be met: 1) measurement invariance needs to hold true for at least one factor indicator and 2) model fit must not be significantly compromised by the remaining constraints. The first criterion was met in the current study by the invariance in cognitive and cigarette second order factor loadings. The model was re-estimated with the release of the noninvariant constraints. Although this model fit the data well ($S\text{-}B\ X^2(310) = 833.43$, $p < .001$, $CFI = .960$, $RMSEA = .042$), a chi-squared difference test with robust correction indicated that the fit significantly declined ($S\text{-}B\ X^2(10) = 31.587$, $p < .001$). Following

these procedures, there was strong indication that factors were not measured equally across the groups.

In the absence of measurement invariance, structural comparisons between males and females cannot be made. Non-invariance also indicates that analysis of the full sample (combined-sex) model is unwarranted and would lead to faulty conclusions. Instead, the models will be analyzed and interpreted separately without cross-comparison.

Male structural model. Estimation of the structural model in the male sample indicated good fit (*S-B X^2*(150) = 354.80, *p* < .001, *CFI* = .968, *RMSEA* = .039) and 18% of the variance in intentions for postsecondary education was explained. Significant direct paths included parental education (β = .225, *p* < .05) and school connectedness (β = .345, *p* < .05*)* which indicated higher likelihood of intentions for postsecondary education. The remaining direct paths in the model were not significant. Significant covariation at the .05 level was found between school connectedness and drug use (β = -.421), parental education and meaning in life (β = .112), drug use and meaning in life (β = -.182), school connectedness and meaning in life (β =.292), drug use and prosocial behavior (β = -.182), and school connectedness and parental education (β = .135). See Figure 2 for a visual representation.

Female structural model. As established in the multi-group analysis, the structural model fit adequately for the female sample (*S-B X^2*(150) = 455.36, *p* < .001, *CFI* = .954, *RMSEA* = .044). This model explained and 10.4% of the variance in intentions for postsecondary education. Similar to the male model, parental education and school connectedness were significant indicators of postsecondary intentions. Higher parental education (β = .158, *p* < .05) and school connectedness (β = .253, *p* < .05*)* indicated higher likelihood of intentions for postsecondary education. The remaining direct paths in the model were not significant.

Significant covariation at the .05 level was found between school connectedness and drug use (β = -.497), parental education and meaning in life (β = .112), drug use and meaning in life (β = -.209), school connectedness and meaning in life (β =.315), and school connectedness and parental education (β = .176). See Figure 3 for a visual representation.

Chapter IV: Discussion

The present study took several factors that previous research has suggested are keys to academic success and persistence and examined how they function together to explain intentions for postsecondary education among high school seniors. Results indicated that both male and female students who were more connected to school and whose parents completed more education identified stronger intentions to continue with their education after graduation, offering partial support for hypothesis one.   Although in the hypothesized direction, the remaining variables (meaning in life, substance use, and extracurricular activities) were not significant indicators of postsecondary intentions.

However, several of these factors were significantly related to school connectedness and parental education. Specifically, male and female students who identified stronger meaning in life were more connected with school, had more educated parents, and used substances less. This suggests that students who identify an overall purpose to their lives are also likely to view their education as important and to make decisions that align with positive values, such as continuing their education and not engaging in recreational drug use. These results support previous assertions that establishing meaning in life in adolescence is an important factor of identity development that can shape behavior and, potentially, aspirations (Burrow & O'Dell, 2010; Damon, Menon, & Bronk, 2003; Emmons, 1999; Kiang & Fulignu, 2010; Schwartz, Coˆte, & Arnett, 2005). Due to the cross-sectional nature of the study, causality cannot be determined and it may be that being more engaged at school leads to higher sense of meaning in life. Regardless, the current study adds to the evidence for a strong connection between meaning in life and school connectedness suggesting that further study may bear fruitful insight into fostering academic success and well-being.

The hypothesis regarding substance use was mostly supported in that it was negatively associated with all other factors in the model. However, substance use was only significantly related to meaning in life and school connectedness for both males and females, and to extracurricular activities in only males. This pattern of deviant (e.g. substance use and a lack of academic engagement) and non-deviant behaviors (e.g. school connectedness and extracurricular activities) supports the theory of problem-prone and general deviancy (Jessor, 1987). The results demonstrate that students who are more deviant tend to exhibit more than one deviant behavior, such as using marijuana and not completing school work. The unique relationship seen between substance use and extracurricular activities in the male sample did not approach a small effect size and thus is hardly worth noting. Interestingly what was not evident in the current study was a relationship between substance use and college aspirations.

Overall, the indicator variables accounted for a relatively small percentage of the variance in postsecondary intentions, suggesting that there are many other factors at play. Even among relationships that reached significance, effect sizes were moderate at best. The most convincing evidence was found in school connectedness, which had a moderate relationship with academic intentions and substance use in both the male and female samples. Also notable, was the relationship between meaning in life and school connectedness which approached a small effect size. Although these factors clearly aren't providing the full picture, they offer possibilities for fostering academic aspirations.

Aside from the small effect sizes, a limitation of the current study was its inability to establish measurement invariance between the male and female samples. Failure to do so prevented an exploration of the effect that sex may have on the model. However, this is not a significant impediment to the current study as there is no clear evidence that differences exist

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between males and females. The lack of measurement invariance demonstrates that school connectedness and drug use operate differently between the groups, something that should be considered in future research. Specifically, items assessing alcohol and marijuana use may be interpreted differently by males than by females. This could be due to the response options being somewhat ambiguous resulting in different conceptualizations of an "occasion" of use. For example, an "occasion" of alcohol use could be anything from a few sips to an entire night of drinking. Similarly, items within the behavioral and cognitive components, such as those referring to 'trying' and 'failing', of school connectedness may elicit different interpretations.

Another limitation of the current study is its use of a single item to measure meaning in life. Reliance on a single item can lead to statistical and theoretical issues. Meaning in life has been recognized as being multidimensional (Steger, 2009). In using a single item, it is unclear how the item was interpreted and whether it evoked, for example, the cognitive, affective, or a combination of the two, components. Another potential issue is that the original item refers to a lack of meaning in life or meaninglessness. The majority of research on meaning in life has not measured it in this way and instead has focused on identifying meaning in life in the positive sense. However, some have argued that meaning in life exists on a continuum which includes meaninglessness (Frankl, 1963; Yalom, 1980) and several instruments designed to measure meaning in life have included similar items (e.g. Fife, 1995; Crumbaugh & Maholick, 1964). Despite these limitations in measurement, the current study provides preliminary evidence for the importance of measuring meaning in life in explorations of academic success, as measured by school connectedness, and how that may influence academic persistence in adolescents. Such evidence suggests that further research that uses a more complete measurement of meaning in life is warranted.

The items in the Monitoring the Future survey added additional limitations to the current study. Perhaps most notably, is the study's approach to socioeconomic status and race. Authors of the study argue for the use of the parent education items as a proxy for socioeconomic status and thus no other items that might provide a clearer picture of SES are included in the survey. The current study was interested in parent education as it has shown to be a key indicator of academic success and persistence (e.g. Klebanov, Brooks-Gunn, & Duncan, 1994; Haveman & Wolfe, 1995; Smith, Brooks-Gunn, & Klebanov, 1997). However, other factors of socioeconomic status, such as household income and parents' occupation, may also play a significant role in a child's academic aspirations (Breen & Johnson, 2005). The current study was not able to take these factors into consideration due to their absence in the data.

Another, potentially significant, variable missing in the current study is race/ethnicity. In Monitoring the Future, selections other than Black or White are coded as missing due to concerns that conclusions based on the limited representativeness of the other race/ethnicity categories would be misleading (Johnston, Backman, & O'Malley, 2005). The result of this approach was that nearly 25% of the data on race was coded as missing in the present study, rendering its inclusion impractical. Although there is some evidence that race/ethnicity has little to do with educational aspirations (e.g. Pitre, 2006; Solorzano, 1992), others have found contradictory results. For example, Mahoney and Merritt (1993) identified that fewer Black students indicated a desire to attend college and thought they would be less successful than White students. Overall, the significantly lower enrollment rates for some racial/ethnic groups (U.S. Department of Commerce) suggest that it is an important factor to consider.

The current study is also limited by its use of only seniors in high school. Limiting the sample in this way neglects the experience of younger students and, most importantly, those who

have already dropped out. However, this limitation was made with a clear rationale in mind. Previous research has indicated that later expectations of postsecondary education are more reliable than earlier ones. For example, longitudinal studies using nationally representative samples of high school students found that the postsecondary education expectations the students had when they were seniors were more accurate predictors of their actual enrollment than when they were sophomores (Sciarra & Ambrosino, 2011; Trusty, 2000). Thus understanding factors related to academic aspirations of senior students may be more meaningful.

A final limitation of the current study is the cross-sectional design. The use of only one data point restricts the ability to actually predict outcomes. Although the current study treats education aspirations as an outcome variable, whether or not it is actually being predicted by the model cannot be determined.   Furthermore, it is unknown if these students followed through with their expectations and enrolled in a postsecondary institution, although previous research provides some indication that they likely did. There is strong indication that education expectations predict enrollment (Sciarra & Ambrosino, 2011) suggesting that a better understanding of how students' expectations develop and are shaped may provide avenues for increasing their academic persistence.

The current study demonstrates that these avenues may be found in school connectedness and parental education. Helping students engage in school, cognitively, behaviorally, and emotionally, may increase their likelihood of aspiring to postsecondary education. Additional ways to do this were revealed through the other variables in the study. Meaning in life has not been considered in previous research in this area and yet the current study suggests that it has ties to school connectedness. Although the direction of this relationship is unknown, it may be that fostering meaning in life is a way to increase school engagement and, thus, academic success.

This could be done through helping students explore the way in which they see themselves as fitting in with the world and encouraging them to identify an over-arching purpose in their lives. For example, Damon (2008) developed the Youth Purpose Study interview protocol which guides adolescents to consider their identity, goals, and overall purpose. This may be further enhanced by establishing a connection between the purpose of education or school work and their overall life purpose. Activities of this nature could draw on the evidence that people often derive and expand their sense of meaning from their work (e.g., Colozzi & Colozzi, 2000; Dik, Duffy, & Eldridge 2009). Recommendations for promoting meaningful work (Dik, Duffy, & Eldridge, 2009) could be adapted to the academic setting by getting high school students to think about why school is meaningful, what might make it more meaningful and how their education might contribute to a greater purpose.

The significance of parent education in academic aspirations and success warrants further research as well. Specifically, an understanding of what educated parents do that produces this result is needed. Aside from encouraging future generations to continue with their education so that their offspring will do the same, there is little that can be done to influence parental education. Instead, knowing if these parents embody unique characteristics, beyond their degrees, would provide insight into the positive effects they have on their children. Several explanations have been proposed to explain this phenomenon, such as greater participation in, and encouragement of, their child's education and more access to resources (Horn and Nuñez 2000). Future research should test these hypotheses as areas of intervention for students with less educated parents.

Postsecondary education reaps substantial benefits for the individual as well as the broader community. The considerable portion of people who do not attend college in the United

States is of great concern and ignoring any potential avenue that might address this issue could have detrimental effects. Using a nationally representative sample, the present study shed light on factors that may contribute to a student's aspirations for postsecondary education. School connectedness and parental education emerged as the most significant. Finally, the study offered preliminary evidence for the role that meaning in life may play in adolescent academic engagement, including achievement and commitment. These results suggest that meaning in life may be an untapped resource for ensuring the success of our youth.

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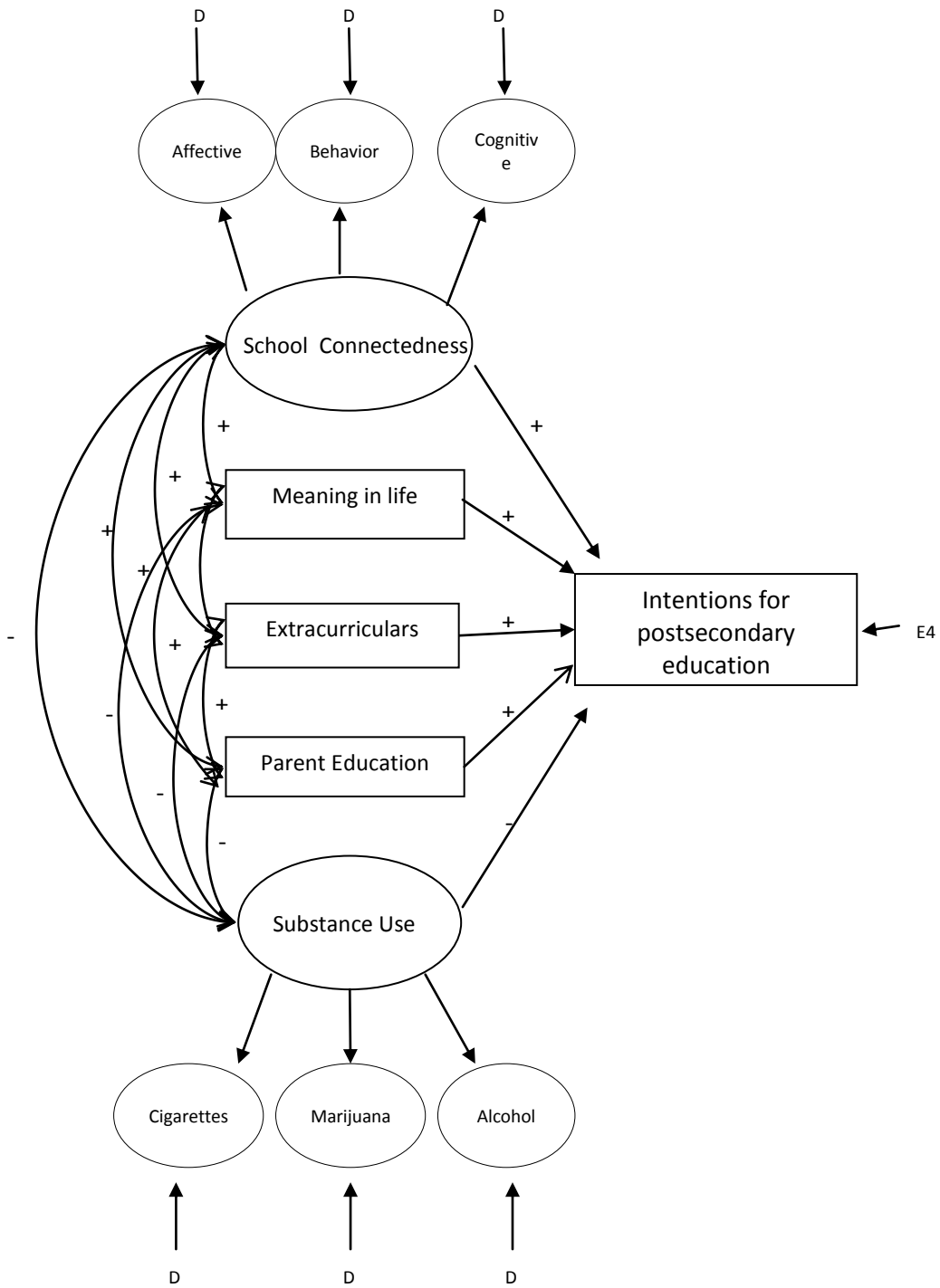
Appendix

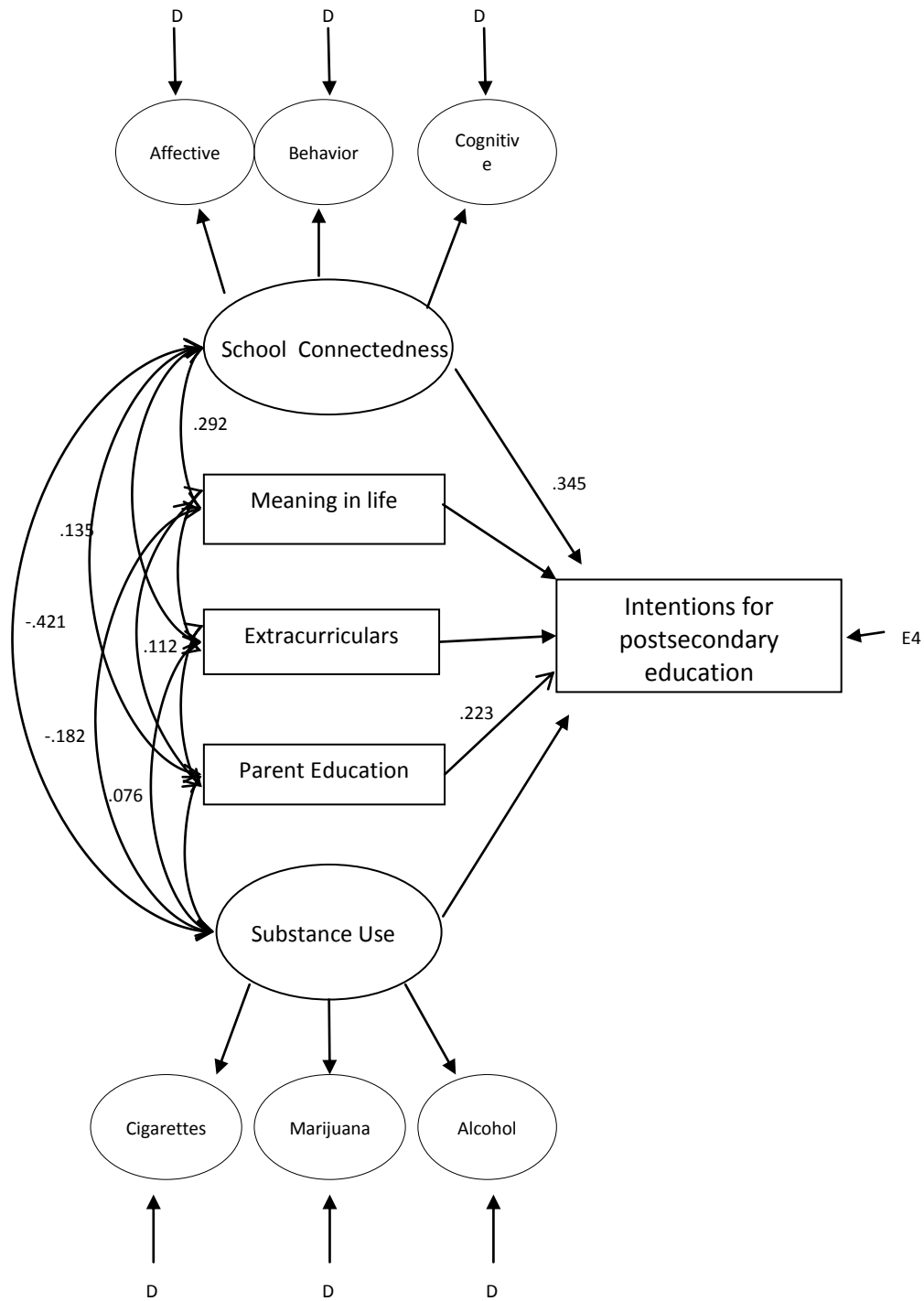*Figure 1*. Hypothesized model of H1 and H2

Figure 2. Male structural model with significant path coefficients.
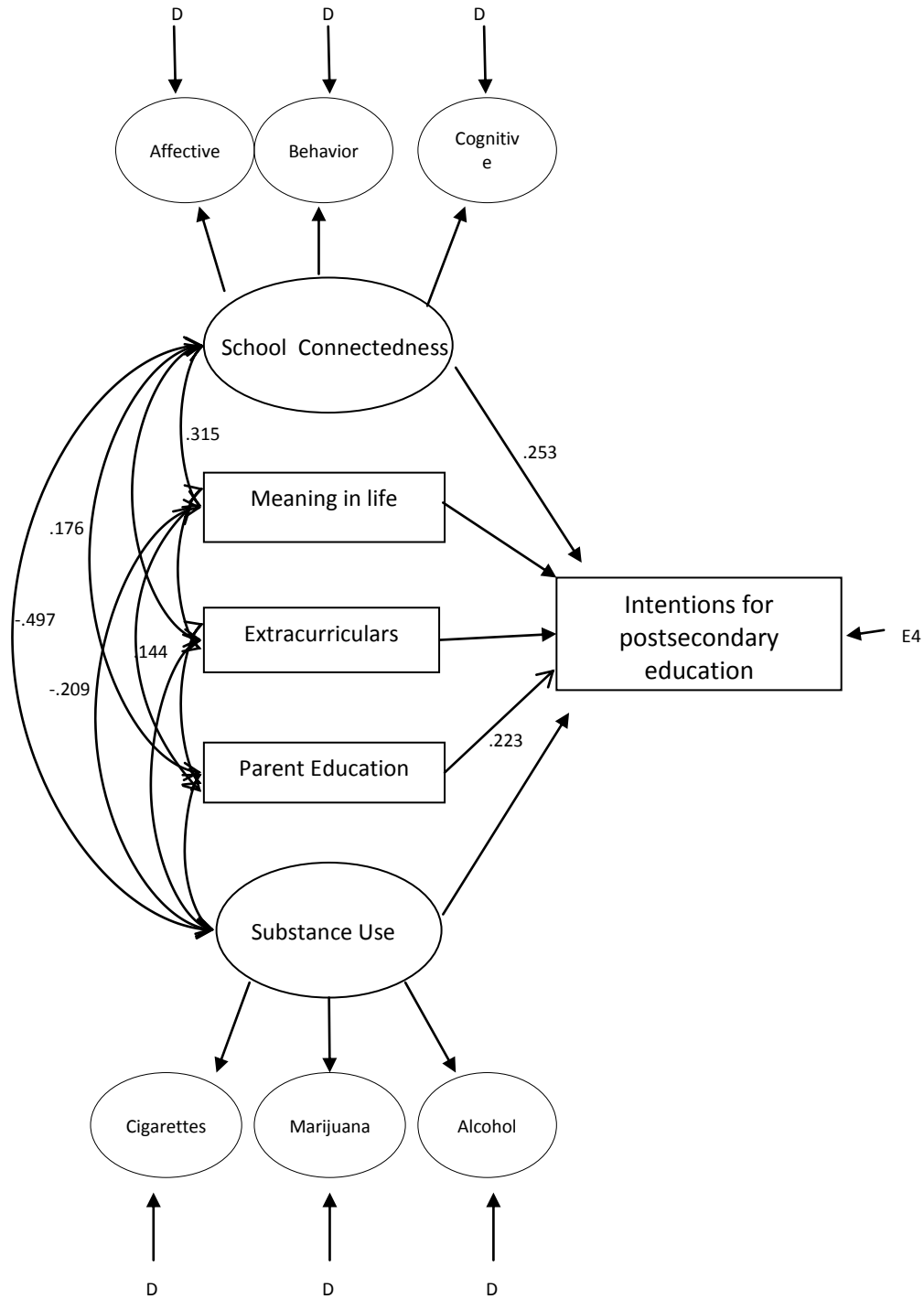
Figure 3. Female structural model with significant path coefficients.

Table 1

Items used for the school connectedness scale

School Connectedness: Affective

How often do you feel that the school work you are assigned is meaningful and important?
Now thinking back over the past year in school, how often did you:
  …Enjoy being in school?
 .. .Hate being in school?
     5=*Almost always* 4=*Often* 3=*Sometimes* 2=*Seldom* 1=*Never*
How interesting are most of your courses to you?
     4=*Quite interesting* 3=*Fairly interesting* 2=*Slightly dull* 1=*Very dull*
How important do you think the things you are learning in school are going to be for your later life?
     5=*Very important* 4=*Quite important* 3=*Fairly important* 2=*Slightly important* 1=*Not at all important*

School Connectedness: Cognitive

Now thinking back over the past year in school, how often did
you:
…find school work too hard to understand?
… get good grades (like As or Bs)?
    5=*Almost always* 4=*Often* 3=*Sometimes* 2=*Seldom* 1=*Never*
Which of the following best describes your average grade so far in high school?
   9=*A (93-100)* 8=*A- (90-92)* 7=*B+ (87-89)* 6=*B (83-86)* 5=*B- (80-82)* 4=*C+ (77-79)*
   3=*C (73-76)* 2=*C- (70-72)* 1=*D (69 or below)*

School Connectedness: Behavioral

Now thinking back over the past year in school, how often did you
…fail to complete or turn in your assignments?
…try to do your best work in school?
   5=*Almost always* 4=*Often* 3=*Sometimes* 2=*Seldom* 1=*Never*

Table 2

	Range	Mean(SD)			T-test Values	
	Total	Total	Males	Females	*t*	Sig (2-tailed)
Meaning	1.00-5.00	3.89 (1.17)	3.88 (1.17)	3.89 (1.17)	-0.2	0.84
Drug Use	1.00-7.00	2.11 (1.22)	2.25 (1.35)	1.98 (1.09)	5.26	0.00
Connect	1.20-5.40	3.64 (.64)	3.53 (.67)	3.74 (.60)	-8.12	0.00
Parent Ed.	1.00-6.00	3.98 (1.17)	4.05 (1.78)	3.93 (1.15)	2.56	0.01
Extracurriculars	1.00-4.88	2.29 (.70)	2.32 (.71)	2.27 (.69)	1.81	0.07
Ed. Intentions	1.00-4.00	3.63 (.63)	3.53 (.70)	3.72 (.53)	-7.45	0.00

Table 3
Item Correlations

	1	2	3	4	5	6
1. Cig. Ever	1	.803**	.508**	.438**	.519**	.414**
2. Cig. Month	.803**	1	.365**	.347**	.454**	.396**
3. Alc. Yr	.508**	.365**	1	.814**	.542**	.425**
4. Alc Month	.438**	.347**	.814**	1	.492**	.427**
5. Ma. Yr.	.519**	.454**	.542**	.492**	1	.850**
6. Ma. Month	.414**	.396**	.425**	.427**	.850**	1
7. Get good Grades	-.201**	-.192**	-.103**	-.117**	-.166**	-.171**
8. Grade	-.229**	-.219**	-.126**	-.131**	-.191**	-.187**
9. Hard to understand	.008	.007	.073**	.049*	.053**	.025
10. School is meaningful	-.148**	-.126**	-.200**	-.180**	-.157**	-.147**
11. Courses are interesting	-.165**	-.128**	-.200**	-.176**	-.162**	-.151**
12. Important for later	-.113**	-.102**	-.174**	-.152**	-.122**	-.097**
13. Enjoy School	-.186**	-.158**	-.168**	-.157**	-.167**	-.154**
14. Hate School	-.175**	-.166**	-.161**	-.157**	-.164**	-.157**
15. Fail to complete work	-.227**	-.192**	-.211**	-.197**	-.221**	-.201**
16. Try Best	-.186**	-.165**	-.229**	-.203**	-.206**	-.198**
17. Meaning	-.132**	-.124**	-.086**	-.095**	-.132**	-.125**
18. Future	-.120**	-.122**	-.039	-.067**	-.071**	-.075**
19. Extracurriculars	.039	.024	.043*	.061**	.028	.042*
20. Parent Ed.	-.037	-.044*	.042*	.020	-.006	-.034

**significant at the 0.01 level (2-tailed)

*significant at the 0.05 level (2-tailed)

Table 3 (continued)

	7	8	9	10	11	12	13
1. Cig. Ever	-.201**	-.229**	.008	-.148**	-.165**	-.113**	-.186**
2. Cig. Month	-.192**	-.219**	.007	-.126**	-.128**	-.102**	-.158**
3. Alc. Yr	-.103**	-.126**	.073**	-.200**	-.200**	-.174**	-.168**
4. Alc Month	-.117**	-.131**	.049*	-.180**	-.176**	-.152**	-.157**
5. Ma. Yr.	-.166**	-.191**	.053**	-.157**	-.162**	-.122**	-.167**
6. Ma. Month	-.171**	-.187**	.025	-.147**	-.151**	-.097**	-.154**
7. Get good Grades	1	.748**	.249**	.128**	.168**	.089**	.230**
8. Grade	.748**	1	.232**	.100**	.162**	.068**	.192**
9. Hard to understand	.249**	.232**	1	-.089**	-.019	-.033	.028
10. School is meaningful	.128**	.100**	-.089**	1	.515**	.499**	.367**
11. Courses are interesting	.168**	.162**	-.019	.515**	1	.463**	.440**
12. Important for later	.089**	.068**	-.033	.499**	.463**	1	.303**
13. Enjoy School	.230**	.192**	.028	.367**	.440**	.303**	1
14. Hate School	.175**	.160**	.088**	.348**	.410**	.297**	.666**
15. Fail to complete work	.494**	.483**	.104**	.218**	.233**	.175**	.180**
16. Try Best	.368**	.345**	-.039	.371**	.331**	.284**	.279**
17. Meaning	.158**	.163**	.122**	.102**	.136**	.116**	.225**
18. Future	.297**	.290**	.108**	.096**	.142**	.062**	.178**
19. Extracurriculars	-.013	-.015	-.009	-.005	.005	.007	.018
20. Parent Ed	.236**	.226**	.108**	-.035	.031	-.042*	.045*

**significant at the 0.01 level (2-tailed).

*significant at the 0.05 level (2-tailed).

Table 3 Continued

	14	15	16	17	18	19	20
1. Cig. Ever	-.175**	-.227**	-.186**	-.132**	-.120**	.039	-.037
2. Cig. Month	-.166**	-.192**	-.165**	-.124**	-.122**	.024	-.044*
3. Alc. Yr	-.161**	-.211**	-.229**	-.086**	-.039	.043*	.042*
4. Alc Month	-.157**	-.197**	-.203**	-.095**	-.067**	.061**	.020
5. Ma. Yr.	-.164**	-.221**	-.206**	-.132**	-.071**	.028	-.006
6. Ma. Month	-.157**	-.201**	-.198**	-.125**	-.075**	.042*	-.034
7. Get good Grades	.175**	.494**	.368**	.158**	.297**	-.013	.236**
8. Grade	.160**	.483**	.345**	.163**	.290**	-.015	.226**
9. Hard to understand	.088**	.104**	-.039	.122**	.108**	-.009	.108**
10. School is meaningful	.348**	.218**	.371**	.102**	.096**	-.005	-.035
11. Courses are interesting	.410**	.233**	.331**	.136**	.142**	.005	.031
12. Important for later	.297**	.175**	.284**	.116**	.062**	.007	-.042*
13. Enjoy School	.666**	.180**	.279**	.225**	.178**	.018	.045*
14. Hate School	1	.218**	.255**	.229**	.115**	-.003	.024
15. Fail to complete work	.218**	1	.456**	.139**	.201**	-.010	.070**
16. Try Best	.255**	.456**	1	.103**	.165**	-.017	-.006
17. Meaning	.229**	.139**	.103**	1	.116**	-.013	.083**
18. Future	.115**	.201**	.165**	.116**	1	-.026	.229**
19. Extracurriculars	-.003	-.010	-.017	-.013	-.026	1	-.014
20. Parent Ed.	.024	.070**	-.006	.083**	.229**	-.014	1

**significant at the 0.01 level (2-tailed)

*significant at the 0.05 level (2-tailed)