ADOLESCENT COPING STRATEGIES AND ONSET OF SUBSTANCE USE

SENIOR THESIS

by

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A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Bachelor of Science in Human Services with Distinction.

Spring 2010

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ACKNOWLEDGMENTS

There are many people who helped me to complete this thesis. First and foremost, I would like to thank Dr. Christine Ohannessian, my thesis advisor, for her support throughout the past two years. Her passion for her work has served as an inspiration for me as I completed my senior thesis. When I was a CHEP Summer Scholar, Dr. Ohannessian helped me with the preliminary steps of conducting and writing a literature review. She also guided me through the stressful process of learning statistical databases and delivering a PowerPoint presentation to a large crowd. I value her contributions to the different stages of my senior thesis, as well as offering editorial advice throughout the year. Lastly, I appreciated monthly meetings to talk about both my thesis and planning for my future. I would also like to recognize and thank Dr. Barbara H. Settles and Dr. Jill Neitzel, who served on my thesis committee throughout the year. Dr. Settles offered valuable comments on my final draft and presentation. She also engaged me in several conversations about my future, and offered insight and advice throughout the year. Dr. Neitzel patiently listened to my presentation three times and proposed several revisions to help me create a polished final product. Thank you also to the Undergraduate Research Office, especially Meg Meiman and Sarah Paylor, who were instrumental in opening the doors to undergraduate research opportunities. In addition, I would like to extend my appreciation to my parents who offered incredible support throughout my college career, especially to my mother who read my thesis several times to offer an objective perspective.

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ABSTRACT

Adolescents use coping strategies, some beneficial and others harmful, to deal with stress and adversity. This paper will address topics related to coping strategies and the onset of substance abuse. Research questions examined relate to gender differences in coping strategies, as well as to whether or not coping strategies are related to the onset of substance use. Planning, emotional social support, denial, and religious coping will be examined as separate dependent variables. Independent variables are the onset of tobacco, alcohol, and marijuana use.

For this study, data were drawn from The Adolescent Adjustment Project (AAP), a project directed by Dr. Christine Ohannessian at the University of Delaware. Students enrolled in public high schools in Delaware, Maryland, and Pennsylvania, totaling 905 sophomores and juniors ranging in age from age 15 to 17, completed a self-report questionnaire. Forty-six percent of the participants were boys, while 54% were girls (Ohannessian, 2009). ANOVA results for religious coping were significant when tested with onset of alcohol (for boys and girls) and marijuana (for boys). Results of this study suggest that identifying relationships between coping styles and substance use may help identify effective and healthy coping strategies to forestall the onset of substance use.

Chapter 1

INTRODUCTION

Adolescence is a time of many life changes. How adolescents cope with these changes is a topic of much concern to parents, teachers, and to society as a whole. One issue arising during adolescence that is of particular concern is the onset of substance use. Researchers have found that the earlier the onset of substance use in adolescence, the greater the risk of substance use later in life, with increasing negative effects. However, it is possible to teach coping skills to young people that will help them make better decisions about how to react to stress when they face adversity. The purpose of this study is to examine why some adolescents demonstrate more successful adjustment than others. The intention of studying coping strategies is to determine whether or not there is a relationship between the use of specific coping strategies and the onset of substance use. In addition, this paper will consider gender differences in the use of coping strategies and how the difference is related to the onset of substance use.

The first section of this paper will present a review of current literature relating to adolescence, the onset of substance use, and coping strategies, both effective and ineffective, that adolescents use to alleviate stress. The second

section will discuss findings drawn from an ongoing, longitudinal project, The Adolescent Adjustment Project (AAP), an NIH-funded study directed by Dr. Christine Ohannessian at the University of Delaware. The AAP looks several indicators of adolescent adjustment, focusing on an adolescent's ability to successfully master developmental tasks required of them.

Chapter 2

LITERATURE REVIEW: ADOLESCENT DEVELOPMENT

Multiple definitions of adolescence exist in scholarly works. Some researchers distinguish different stages of adolescence - early (ages 10 - 13), middle (ages 14 -17), and late (ages 18-20s) (Smetana, Campione-Barr, and Metzger, 2006). Smetana, Campione-Barr, and Metzger (2006) offer a summary of adolescence as a transitional time period. They suggest, "Adolescence begins in biology and ends in culture, because the transition into adolescence is marked by the dramatic biological changes of puberty, while the transition to adulthood is less clearly marked" (p. 258). During adolescence there is a complex interplay between biology and culture. As a result, the transition from childhood to adulthood is multifaceted, and sometimes challenging.

Research emphasis has shifted throughout the decades. One such shift involved taking on a more positive developmental mindset, rather than focusing on problem-centered research. Steinberg and Morris (2001) suggest that more current research emphasizes contextual aspects of adolescent adjustment. They note, "The study of identity, autonomy, intimacy, and so forth, once a central focus of research on adolescence, waned considerably as researchers turned their

attention to contextual influence on behavior and functioning and to the study of individual differences," (Steinberg and Morris, 2001, p. 15).

Frameworks for Studying Adolescence: Context is Key

The developmental approaches and theories to studying adolescence cited in this paper were selected because they address normative adolescent adjustment in the context of the environment, thereby building a framework to evaluate the multiple indictors of adolescent adjustment. The developmental psychopathology, ecological, and psychosocial approaches offer workable frameworks for studying adolescence in context. In light of these theories, other contextual factors, such as peer/sibling relationships, barriers to normative adolescent adjustment, and gender differences will be overviewed.

The developmental psychopathology approach looks at the adolescent within his or her environmental context. Masten (2007) defines developmental psychopathology as "the study of behavior problems and related disorders in the full context of human development" (p. 1). This theory describes normal behavior patterns by age group, thus helping researchers uncover the development of mental health problems. Identifying what is normative for an age group helps in the development of effective prevention strategies (Masten, 2007). The psychopathology approach helps explain the emergence of substance use during adolescence, as opposed to childhood. The theory also has the ability to

differentiate between substance experimentation and abuse and is useful, when studying the successful adaptation of high-risk individuals. It emphasizes that individuals play an active role in their own development (Cicchetti and Rogosch, 2002).

Like the developmental psychopathology approach, the ecological theory, psychosocial framework, and family systems theory stress contextual issues and human relationships in adolescent development (Smetana, Campione-Barr, and Metzger, 2006). Relationships include the family, extra-familial relationships (e.g. peers and romantic partners), and other wider environmental contexts (i.e. how the adolescent relates to his/her surroundings). The family systems theory provides insight into the influence of sibling relationships and cultural differences during adolescence (Smetana et al., 2006).

Context is important when studying peer influences. Peers impact the frequency of alcohol and cigarette use during adolescence (Steinberg and Morris, 2001). People are most easily influenced by their peers during middle adolescence (Steinberg and Morris, 2001). Popularity may be an indicator of positive social adaptation. However, popularity may also place adolescents at risk for substance use and minor deviant behaviors (Smetana, Campione-Barr, and Metzger, 2006). In addition, early onset of intimate relationships place adolescents at risk for deviant behavior, such as an increase in substance use (Smetana, Campione-Barr, and Metzger, 2006). New aspects of relationships

emerge as adolescents begin spending less time with their families and parents, and more time with their peers. As this shift in relationship structure takes place, it is common and normative for conflict to exist, especially in early adolescence (Steinberg and Morris, 2001).

Family systems theory focuses on the influence of sibling and parental relationships. These types of studies help researchers assess the differences in shared and non-shared environments. Siblings, much like peers, can promote normative and positive adolescent adjustment, as well as at-risk behaviors. Siblings have the ability to promote prosocial behavior, such as academic achievement, as well as heighten problematic behavior, such as substance use (Steinberg and Morris, 2001). As conflicts such as verbal arguments between teenagers and parents increase closeness and time spent together begin to decline in early to mid adolescence (Steinberg and Morris, 2001). A moderate amount of conflict has been found to lead to better adulthood adjustment, as compared to families that experience either no conflict or severe conflict. Conflict may be a way for adolescents to gain independence within their families, while gaining helpful negotiation and conflict-resolution skills (Smetana, Campione-Barr, and Metzger, 2006).

Barriers Associated with Adolescent Development

Adolescents encounter many changes as they grow to adulthood. These changes may bring extreme stress for some, while others experience only normative, minor stress. This section will focus on stressors associated with adolescence and how young people overcome adversity in the face of their developmental changes. Studying risk and resiliency can help identify successful strategies for moderating emotions in the most extreme stressful conditions. Adolescents must juggle stressors associated with puberty, change in environment, and the gradual increase in independence (Spear, 2000).

Spear (2000) defines stress as "a state of threatened homeostasis that requires adaptive processes to restore and sustain this equilibrium" (p. 428). Typical stress includes changes in mood, risk behavior, and an increase in conflict with parents. Current researchers generally agree that most adolescents do not experience stress in a maladaptive way. Instead, they find ways to cope successfully with newly emerging stressors (Cicchetti and Rogosch, 2002). However, it is true that the frequency of some negative emotions rise during adolescence. For example, feelings of depression increase from childhood to adulthood, with anxiety and self-consciousness climaxing during the time period of adolescence (Spear, 2000).

Emerging biological changes exacerbate heightened stress levels of adolescence. New cognitive skills and coping strategies continue to develop

throughout adolescence (Steinberg and Morris, 2006). The multilayered stress occurring in adolescence can sometimes overwhelm nascent coping skills (Spear, 2000). Sometimes the inability to cope with new stressors, such as physical, academic, and social changes may be attributed to unresolved issues of childhood such as separation anxiety (Cicchetti and Rogosch, 2002). It is important to not only focus on sources of normative stress in adolescence, but it is equally important to study how adolescents who experience high levels of stress overcome adversity and develop into successful adults.

Resiliency is characteristic of people who adjust effectively, and proceed to live successful lives after overcoming multiple challenges confronting them in the course of their development (Masten, 2007). Research has focused on both negative and positive adult outcomes of at-risk children. The differences are valuable when contemplating prevention strategies for high-risk individuals. Some research indicates that late adolescence and emerging adulthood is a time for improvement in resilience (Masten, 2007). According to the developmental psychopathology theory, opportunity for prevention of negative adult outcomes can occur if early intervention is possible through promoting self and social regulation strategies (Masten, 2007). Protective factors alleviate barriers associated with adversity. Problem-solving skills, self-regulation skills, religion, special talents, strong relationships with peers, parents, or an adult, and positive self-perception are examples of protective factors (Masten, 2007).

Gendered Biological Change

Puberty often marks the beginning of new cognitive, physical, and psychosocial changes (Cicchetti and Rogosch, 2002). The prefrontal cortex matures throughout the teenage years (Cicchetti and Rogosch, 2002). Gray matter continues to develop in the frontal lobes, furthering the development of "executive functions" affecting reasoning, impulse control, and planning (Cicchetti and Rogosch, 2002). Changes within the body influence the psychosocial development of adolescence. Adolescents who experience puberty at an off time, compared to their classmates, experience more feelings of stress.

The effect of early maturation has different implications for girls and boys. Early maturing girls tend to experience feelings of low self-esteem, especially associated with body issues, as well as an increase in risk-taking behavior (e.g., early onset of sexual activities). Early maturing boys also experience an increase in risk-taking when compared to later maturing peers, but often they are involved in athletics due to their larger physical stature, thereby promoting popularity and self-confidence (Spear, 2000).

Adolescent girls tend to experience feelings of stress more strongly than those of adolescent boys (Spear, 2000). Often a decrease in self-esteem affects females as they progress through adolescence (Spear, 2000). Depression rates increase during adolescence (Spear, 2000), although researchers are still unclear as to why. Some researchers point to gender differences in hormone patterns, an

increase in stress, and different rates of development in cognition and coping mechanisms (Steinberg and Morris, 2001). An overview of current literature on adolescence has been discussed. Now it is time to look at how coping strategies help young people alleviate stressors associated with adolescent development.

LITERATURE REVIEW: COPING STRATEGIES

One way that adolescents successfully navigate the transition period from childhood to adulthood is by developing positive and effective coping strategies to handle stress and adversity. Scholars suggest varying frameworks for defining coping strategies and dimensions. There are a variety of coping strategies. These strategies fall under two broad coping dimensions- engagement and disengagement. All terms are generally used for the same concepts, with slight variations. This paper will center on engagement vs. disengagement as the framework for coping strategies. Compas et al. (2001) define engagement and disengagement coping responses as "responses that are oriented either toward the source of stress or toward one's emotions or thoughts (e.g. problem solving or seeking social support). Disengagement coping refers to responses that are oriented away from the stressor or one's emotions or thoughts (e.g., withdrawal or denial)" (p. 92). Examples of disengagement coping strategies include avoidance, denial, wishful thinking, and social withdrawal (Compas, Connor-Smith, Jaser, 2004).

Coping strategies influence how people deal with stressors in their lives, both in positive and negative ways. Symptomatology is a term used to describe indicators that are not considered normative aspects of adolescent adjustment. Sometimes, the relationship between symptomatology and specific coping strategies can indicate whether or not that strategy is useful or detrimental to the employer. The majority of coping strategies are influenced greatly by gender.

Definitions Coping Strategies and Dimensions

The transition through adolescence demands the development of a strong repertoire of coping strategies. Compas, Conner-Smith, Saltzman, & Wadsworth (2001) define coping as "an important aspect of the more general processes of self-regulation of emotion, cognition, behavior, physiology, and the environment" (p. 88). Coping strategies are mediators of stress that may aid or inhibit positive adolescent adaptation (Compas et al., 2001). The terms *active coping, approach coping*, and *engagement coping* are generally used interchangeably to describe coping dimensions. Examples of coping strategies include coping through religious faith, seeking social support, denial, use of alcohol or drugs, humor, and emotional release (Compas et al., 2001). Cognitive capacities are still developing in middle childhood and adolescence, therefore older adolescents generally have a wider repertoire of coping strategies to choose from (Compas et al., 2001).

Studies have found that most adolescents transition into adulthood possessing functional coping strategies to deal with a variety of stressors (Seiffge-Krenke, 2000). Seiffge-Krenke (2000) characterize functional coping as actively engaging in problem solving techniques (i.e. seeking advice or social support). Dysfunctional coping styles often include those falling under the disengagement coping dimension (Seiffge-Krenke, 2000).

Cicchetti and Rogosch (2002) suggest that the development of coping strategies may be accomplished through a sequence of stages, meaning that if a person does not effectively master how to deal with stressors of childhood, he or she will not be able to effectively handle stress associated with adolescence. The transitional stressors may be amplified for those children who have not developed effective coping skills during adolescence (Cicchetti and Rogosch, 2002). Seiffge-Krenke (2000) found that some adolescents learn bad habits as they develop coping strategies, opting for strategies that may aggravate rather than alleviate their stress.

Developmental progress affects the variety of coping strategies that adolescents can call upon in times of stress (Compas et al., 2001). Cicchetti and Rogosch (2002) explain, "The cognitive and emotional capacities for coping with a traumatic event, and the meanings attributed to the occurrence, are likely to be very different for individuals aged 6, 16, or 36" (p. 7). Around age 15 is typically

when adolescents experience a turning point for developing and utilizing more advanced levels of coping strategies (Seiffge-Krenke, 2000).

Coping strategies have been found to have an impact on different aspects of life. A literature review conducted by Compas, Connor-Smith, Saltzman, & Wadsworth (2001) identified thirteen studies associating the use of engagement coping with higher academic competence. In contrast, eight studies showed a connection between lower academic competence and disengagement coping strategies (Compas et al., 2001). Disengagement coping was found in boys to be related to aggressive symptoms (Compas et al. 2001). Problem-focused coping also has been linked to lower levels of internalizing symptoms (Compas, Connor-Smith, Saltzman, & Wadsworth, 2001). In addition, studies have shown that the more adolescents use engagement coping strategies, the less depressive symptoms they display (Seiffge-Krenke, 2000). Active coping has been found to have mediating effects for impulsivity and internalizing problems (Compas, Connor-Smith, Jaser, 2004). Engagement and problem-focused coping (i.e., problem solving) have steadily been linked to better adjustment in childhood and adolescence (Compas, Connor-Smith, Saltzman, & Wadsworth, 2001).

Withdrawal and avoidant coping mechanisms (both falling under the disengagement coping dimension) have been found in several studies to limit positive adolescent adjustment. Seiffge-Krenke (2000) found drug dependency, depression, delinquent behavior, and anxiety were associated with the frequent

use of withdrawal. Other studies conducted by Chan (1995) and Ebata and Moos (1991) had very similar results with regard to the use of avoidant coping in adolescents showing symptoms of depression (Seiffge-Krenke, 2000). Withdrawal has been found in studies to have a significant correlation with symptomatology. As symptomatology increases, the use of withdrawal as a coping strategy also rises (Seiffge-Krenke, 2000). In summery, different coping strategies can have either positive or negative implications in adolescent adjustment. Generally speaking, coping strategies that fall under the engagement dimension have more positive outcomes.

Situational Use of Coping Strategies by Gender and Source of Stress

Different coping strategies are used depending on the situation. For example, boys and girls cope with stress differently. Studying the relationship between how boys and girls cope with stress may help identify effective coping strategies. Moreover, the source of stress is additionally important when studying how coping strategies are utilized. In general, the range of coping strategies increases for adolescents as their level of stress heightens.

Adolescent girls tend to experience inner distress, amplifying their own feelings of self (e.g. low-self esteem), whereas males may act outwards with aggressive anger and display poor impulse control (Cicchetti and Rogosch, 2002). As seen in the tables, boys report a much higher percent of using marijuana.

Adolescent boys and girls differ in some ways with regard to the development of coping strategies. Gender differences in the use of coping strategies increasingly diverge as adolescents age (Seiffge-Krenke, 2000). Some studies have found that boys more frequently rely on avoidance coping strategies, such as denial, while girls consistently use more approach strategies such as seeking emotional support (Erikson and Feldstein, 2007). For example, the use of social support has more often found to be used by girls than boys. In addition to gender, the use of specific coping strategies is also contingent on the source of stress.

Seiffge-Krenke (2000) found that there are different types and levels of stressors. For example, one differentiating factor of stress focuses on the source of stress. Some studies show that the source of stress indicates the tendency and usefulness of specific coping strategies. Avoidant coping is frequently used during adolescence when dealing with parental divorce, teenage pregnancy, suicide, immigration, and imprisonment (Seiffge-Krenke, 2000). Some research indicates that avoidant coping can be an effective tool to deal with severe stressors the individual has no control over. The engagement coping dimension may be helpful for an adolescent in a situation where he or she has some control (e.g., achieving good grades). However, one study found that adolescents who were dealing with parental conflict have poorer adjustment when using a problem-centered coping strategy, a type of engagement coping style (Compas et al., 2001).

Stress appears to be a predictor of symptomatology. Some experts believe that the presence of certain coping strategies is predictive of future symptomatology. For example, Seiffge-Krenke (2000) found that withdrawal was a strong and consistent predictor of adolescent symptomatology. Moreover, emotional and behavioral problems heightened the use of withdrawal as a coping strategy. Seiffge-Krenke (2000) explain that experts are still in disagreement about which comes first, symptomatology or harmful coping strategies. Many studies examining the correlation between types of stressors and symptomatology are not conducted longitudinally, therefore they only provide a short time period without causal relationships (Seiffge-Krenke, 2000). The way adolescents cope with stress is influenced by gender and the situation. Each individual situation and the gender of the adolescent must be considered when considering the use of specific coping strategies.

Roles of Coping Strategies and Resiliency

The development of effective coping strategies is important among all individuals, but especially those adolescents who are characterized as "at-risk." Cicchetti and Rogosch (2002) describe how resilient people may utilize coping strategies, noting, "Resilient individuals may need support to deal with the emotional difficulties and distress that are often associated with coping and the emotional difficulties they have had to address and surmount" (p. 10). The avenues used by adolescents to cope with life stressors are important to note

when studying the development of depression during the teenage years (Compas, et al., 2001).

Steinberg and Morris (2001) discuss the influences of coping strategies on adolescent depression. Compas, Smith, and Jaser (2004) record a jump from 2% prevalence of depression in childhood to a 4-7% increase in adolescence. Up to 50% of adolescents who are depressed also show signs anxiety and externalizing problems (Compas, Connor-Smith, Jaser, 2004). Data collected in a longitudinal study conducted by Shek (1998) indicate that people who have the ability to demonstrate a high level of coping report less frequent patterns of substance abuse, school related problems, and psychological disruptions. Furthermore, significant correlations were identified in longitudinal studies taken from a comparison between Time 1 (earlier) and Time 2 (later) data collections, "The data generally showed that those who experienced a more negative family environment at Time 1 had: (a) higher levels of psychiatric morbidity, school problems, and smoking behavior, and (b) lower levels of coping resources at Time 2" (Shek, 1995, p. 170). These findings suggest that coping strategies have positive mediating effects of coping on substance use.

LITERATURE REVIEW: SUBSTANCE USE

Adolescence is a critical time period for the development of both coping strategies and substance use. An in-depth look at coping strategies and the onset of substance use demonstrates that the two constructs are intertwined in their

influence on adolescents. Early adolescence is an ideal time to examine because the majority of substance use is usually initiated during this time (Wills and Filer, 1996).

Early onset of substance use is a predictor of substance abuse problems later in life. People who start using drugs and alcohol during adolescence, in comparison to those who start in adulthood, develop dependency at a much higher rate (Wills & Filer, 1996). For example, increase in cocaine abuse is more rapid during adolescence than it is during adulthood (Wills and Filer, 1996).

Adolescents who use substances tend to be polydrug users, meaning they often are using more than one substance at a time. One study found that 40% of people who started drinking before age 14 had a high rate of lifetime alcohol dependence (Wills & Filer, 1996). One theory explaining why early onset is so influential is that it can disrupt brain growth and neural development (Spear, 2000). Another theory is that early onset of drug use does not have a causal effect, but is considered a "marker" for later abuse problems (Spear, 2000). Whatever the case, early onset of substance use is if of particular concern.

Risk and Resiliency

An increase in sensation and novelty-seeking activities typically occurs during adolescence. One might assume that teens experimenting with drugs for the first time is harmful, but adolescent experimentation is a topic of differing

viewpoints in present literature. For example, one viewpoint is that it is normative adolescent behavior for young people to experiment with substances as they progress to adulthood, while others view the onset of substance use as a marker of at-risk behavior and a precursor to problematic adult substance abuse. Interestingly, one study conducted by Shedler and Block (1990) presented data suggesting that adolescents tend to choose drug experimentation over abstaining completely or frequent use, stressing that risk-taking during adolescence is normative behavior. Results of their study concluded that people who have never tried substances had higher anxiety levels and control issues and lower level of social competence while people who use substances frequently tended to be characterized as withdrawn (Shedler and Block, 1990). In addition, some researchers found that risk-taking can promote survival skills and successful adaptation through growing and gaining knowledge of the world through one's own experience. While some risk-taking behavior can be harmless, adolescents participating in such behavior may be at risk for incarceration, contracting HIV/AIDS, teenage pregnancy, and problematic substance abuse later in life (Spear, 2000).

One of the most frequent reasons given for onset of drug use is the desire to try something new and indulge curiosity. For example, most teenagers will try an alcoholic beverage before graduation, however, not many will develop serious drinking problems. Further, some teenagers who participated in problem

behavior, such as delinquency or substance use, grow up to be successful citizens as adults. Steinberg and Morris (2001) contribute some of this to "ageing out." This term is used to describe the natural course of life as the adolescent enters adulthood, when they participate in less "at-risk" behavior and more prosocial behavior.

Mediating Effects of Coping Strategies

Substance use during adolescence tends to be comorbid with other problems such as aggression and depression during adolescence (Wills and Filer, 1996). Risk factors for substance use in adolescence include stress, substance abuse among parents, temperament, and peer groups (Bretching and Giancola, 2007). According to Spear (2000), peer substance use and perceived level of stress are among the most influential factors that predict substance use among adolescents. When stress increases, an increase in alcohol use occurs (Spear, 2006). The stress-coping theoretical model suggests that the use of substances may be one coping function. Substance use generally falls under the avoidant coping dimension (Wills and Filer, 1996). Drinking to cope (DTC) is associated with avoidant coping methods. Adolescents participating in DTC are more likely to use avoidant coping methods and have higher levels of alcohol use and alcohol related problems (Wills and Filer, 1996).

The stressor vulnerability model explains that people who use alcohol as a means to reduce stress do not believe in the effectiveness of other coping strategies. Positive expectations of alcohol use promote the likelihood that an individual will use alcohol as a coping strategy (Catanzaro and Laurent, 2004). College students who have been diagnosed with alcoholism represent a population that demonstrates a lack of adaptive coping skills (Bretching and Giancola, 2006). In addition, problem-focused coping occurred when elevated levels of alcohol expectations were present (Wills, Sandy Yeager, Clearly, & Shinar, 2001). While coping strategies such as DTC increase the use of substances, positive coping mechanisms have been linked to lower levels of substance use. The use of engagement coping has been associated with lower levels of substance use, whereas a higher level of substance use is associated with a disengagement coping dimension (Bretchting and Giancola, 2006).

Avoidance and denial coping are considered to be maladaptive problem solving coping strategies. These strategies are associated with higher levels of drug use. One study found that even after controlling for age and socioeconomic status, adolescent girls and boys who demonstrated poorer coping skills, such as avoidance and denial, were more likely to have a substance abuse disorder. Specifically, Brechting and Giancola (2006) found that people who have a tendency to use avoidance, minimizing, and denial coping engage in higher frequencies of substance use. Wills et al. (2001) concluded that high use of

avoidant coping has been related to higher counts of alcohol problems. Helplessness, hanging out, and general avoidant coping are often reported alongside the use of substances as a coping mechanism (Wills and Filer, 1996). Disengagement coping affects both initiation and change in substance use over time (Wills and Filer, 1996).

In sum, adolescence is a critical time period to help young people develop effective coping strategies to respond to future life stressors. The coping strategy an adolescent utilizes can have positive or negative implications on their adaptation. Engagement coping strategies are generally associated with more successful adolescent adjustments. Conversely, disengagement coping strategies were positively related to at-risk behaviors such as substance use and symptoms of depression.

Chapter 3

METHODS

In an effort to discover the relationship between onset of substance use and coping strategies, data were drawn from The Adolescent Adjustment Project. The following research questions will be addressed to help uncover whether or not such a relationship exists. The following questions will be examined: (1) Are the use of coping strategies related to the onset of substance use? Drugs to be considered include alcohol, tobacco, and marijuana. Coping strategies being analyzed will be emotional social support, denial, planning, and religious coping. (2) Does the relationship between the onset of substance use and coping strategies differ by gender? When answering these questions, it is important to outline the methodology and source of the data that were collected.

Adolescent Adjustment

The Adolescent Adjustment Project (AAP) is a study directed by Dr. Christine Ohannessian at the University of Delaware. Data were collected using a self-report questionnaire. Measures used were the COPE Inventory (Carver et al., 1989) and the First Time Substance Use Survey. ANOVA results for religious coping were significant when tested with onset of alcohol (for boys and girls) and marijuana (for boys). This relationship between coping styles and substance use may help identify coping strategies to forestall the onset of substance use.

The Adolescent Adjustment Project included a sample of adolescent students enrolled in high school. The sample included 905 high school sophomores and juniors drawn from Time 3 data of the Adolescent Adjustment Project (Ohannessian, 2009). Forty-six percent of the participants were boys, while 54% were girls. All participants attended a public high school in Delaware, Maryland, or Pennsylvania. The age range of the students was 15-17 years old. The mean age of adolescents was 16.10 years old. Sixty-three percent of the sample were Caucasian, 24% reported being African American, and 13% Hispanic. The remaining reported being Asian or "Other."

Measures

The COPE Inventory (Carver et al., 1989) was used in the study to measure various coping strategies used by adolescents during times of stress. Participants completed the 60-item measure at school. The Cronbach alpha coefficients for the coping strategies used in the study included the following; planning (.82), emotional social support (86), religious coping (.88), and denial (.72). The scale is measured with a four-point Likert scale ranging from "Don't do this at all" to "Do this a lot."

Examples of questions include the following:

Planning: *I make a plan of action.*

I try to come up with a strategy about what to do.

Religious coping: *I pray more than usual.*

I try to find comfort in my religion.

Emotional Social Support: *I talk to someone about how I feel*

I get sympathy and understanding from someone.

Denial: *I act as though it hasn't even happened.*

I refuse to believe it actually happened.

Substance use was measured through the First Time Substance Use Survey. This survey asked participants to record the age of their first use of substances. The focus of this particular analysis was ages of onset for alcohol, marijuana, and tobacco. Because the data were skewed, prior to running ANOVA tests, the age of onset variables were recoded to reflect the different stages of adolescence. The variables were recoded so that 13 and under = 1, 14-16 = 2, 17-18 = 3, and 4 = "never/not yet tried substances." By doing this, the tests could be run more efficiently and could account for the wide range of ages recorded. Instead of running tests for every specific age that was recorded, four tests could cover the bulk of the data. Recoding also allowed incorporation of adolescence who reported never having tried substances.

Procedures

Data for the Adolescent Adjustment Project has been collected every spring since 2006 through a self-report questionnaire. After securing approval from the Human Subjects Committee (Approval # HS 09-019), the survey was distributed to adolescents in the classroom by trained research assistants. The project staff collected both parental consent and adolescent assent from all of the

students before administering the test. The students generally completed the survey within 40 minutes. All adolescents who completed the survey received a free movie pass.

Chapter 4

RESULTS

Univariate Analyses

Univariate analyses were conducted to examine (a) gender differences in the use of coping strategies, and (b) how the use of coping strategies affects the onset of substance use. Each coping strategy (religious coping, emotional social support, planning, and denial) were examined as separate dependent variables. The analyses were separated by gender. The independent variables were first time use of tobacco, alcohol, and marijuana. Separate tests were run for each respective substance. Results are displayed in graphs and charts at the end of the section. Graph 2 indicates that denial is utilized as a coping strategy more often by boys, emotional social support is chosen more frequently by girls, and that planning and religious coping are more evenly split between boys and girls.

Religious Coping

The ANOVA results for religious coping were significant when tested with onset of alcohol and marijuana. The test for alcohol was significant for both boys [(F=600)=5.067, p=.002] and girls [(F=945)=7.161, p=.000]. Tobacco results for boys were [(F=66)=1.83, p= .155]. The results for girls were [(F=254)=1.177, p=.313]. The results for marijuana were only significant for boys where [(F=86)=4.623, p=.007]. The results for girls were [(F=127)=1.192,

p=.318] for religious coping. This data suggests that religious coping is associated with a later onset of alcohol for boys and girls and marijuana for boys. The significant results can be found in Table One. The implications of these results will further be addressed in the discussion section.

Emotional Social Support

Results for emotional social support coping were not significant. Alcohol results were [(*F*=941)=.272, *p*=.846] for boys, and [(*F*=2256)=.213, *p*=.888] for girls. Tobacco results for boys were [(*F*=168)=.595, *p*=.622] and for girls [(*F*=748)=1.348, *p*=.265]. Results for onset of marijuana for boys were [(*F*=187)=1.111, *p*=.356] and for girls [(*F*=458)=1.180, *p*=.322]. Although none of the tests were significant for emotional social support, the frequency of use by gender is displayed in Graph 2 as "E.S.S." The study found that girls used emotional social support as a coping strategy at a higher frequency than boys did. These data indicate a difference in the way boys and girls cope.

Planning

None of the tests were significant when looking at planning as a coping strategy. The results of alcohol onset for boys were (*F*=1053)=.725, *p*=.538] and for girls were [(*F*=1871)=2.217, *p*=.085]. Planning results for tobacco were [(*F*=271)=1.245, *p*= .305] for boys and [(*F*=513)=.867, *p*=.424] for girls. When looking at marijuana, the planning coping strategy's results for boys were

[(F=313)=.536, p=.660] and for girls [(F=296)=.271, p=.846]. The use of planning as a coping strategy was fairly evenly split by gender, as shown in Graph 2.

Denial

The results for alcohol for boys were [(F=727)=1.872, p=.134] and for girls were [(F=988)=.974, p=.405]. Tobacco results for boys were [(F=122)=2.098, p=.115] and girls [(F=306)=.126, p=.882]. Marijuana results for boys were [(F=142)=1.807, p=.161] and for girls [(F=146)=.424, p=.737]. Consistent with the literature, as seen in Graph 2, boys utilize denial as a coping strategy at a much higher frequency than girls do.

Charts and Figures

Table 1

Univariate Analysis of Variance of Substance Use and Coping Strategies by Gender

	Substance Use					
Significance level (*p)*	Tobacco		Marijuana		Alcohol	
Coping Scale	Boys	Girls	Boys	Girls	Boys	Girls
Denial	.115	.882	.161	.737	.134	.405
Planning	.305	.424	.660	.846	.538	.085
Religious Coping	.155	.313	.007	.318	.002	.000
Emotional Social Support	.622	.265	.356	.322	.846	.888

Table 2

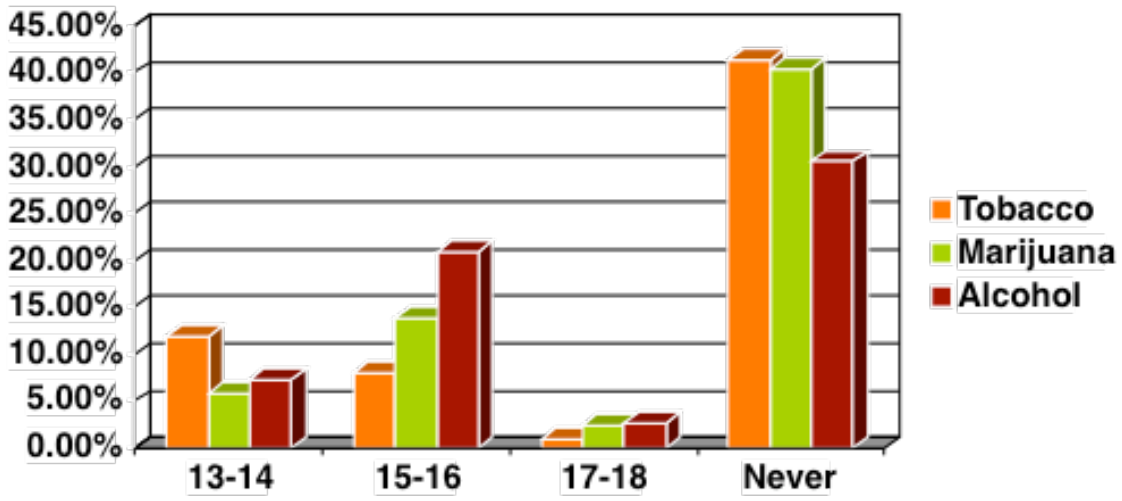
Age Reported First Time Use of Substances

	Percentages of Ages Reported					
Substance	1	2	3	4	Missing	Total
Tobacco	11.9%	8.1%	1.0%	41.3%	37.7%	100%
Marijuana	5.8%	13.9%	2.4%	40.3%	37.6%	100%
Alcohol	7.3%	20.9%	2.7%	30.5%	38.6%	100%

Notes: Ages 13 and under = 1, 14-16 = 2, 17-18 = 3, 4 = "never/not yet"

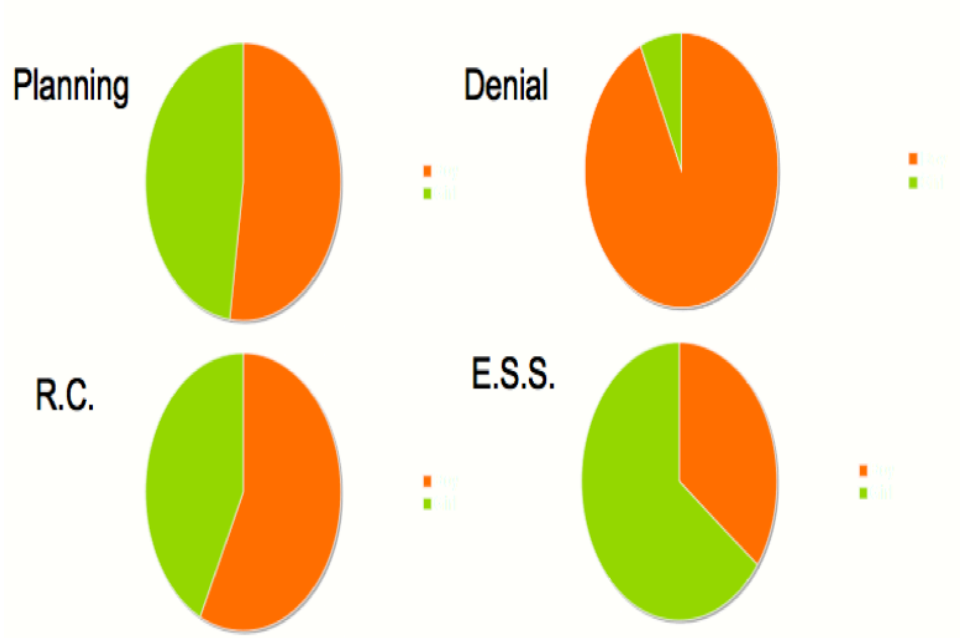
Graph1

Graphical Display of Age of Onset for Tobacco, Marijuana, and Alcohol



Graph 2

Graphical Display of Coping Use by Gender



Green=Girls, Orange= Boys; R.C.= Religious Coping; E.S.S. = Emotional Social Support Coping

DISCUSSION

The goal of this study on adolescent coping strategies and the onset of substance use was to try to determine whether or not certain coping strategies can delay the onset of substance use in adolescence. An additional goal was to find out if the results differed by gender. Results of this study are consistent with prior studies indicating that religious coping is related to the onset of substance use, as well as the level of substance use. Consistent with the literature, religious coping was associated with onset of alcohol use in both boys and girls. In addition, religious coping was found to be related to the onset of marijuana use in boys. Religious coping has been linked to lower levels of substance abuse and conduct disorders (Mahoney et al., 2006).

Current literature is consistent with these findings. Religion can serve in multiple facets of coping. For example, one could look for support with God. Seeking support in the religious community may help adolescents during a time of stress. Types of religious coping include "benevolent religious reappraisal," where people look at the stressor in a positive light, or "punishment from God," where people see the stressor as a punishment for their previous sins (Mahoney, Pendleton, Ihrke, 2006). Religious coping has been linked to lower occurrences of substance abuse and conduct disorders (Mahoney et al., 2006). Curiously, little research has been conducted on the role of religion in adolescents' lives, even though 90-95% report a belief in God or a universal spirit (Mahoney, Pendleton, and Ihrke, 2006). Pargament (1997) offers a framework for religious coping use, explaining, "life events can be interpreted in religious terms (i.e., religious coping appraisals), that religion offers people of all ages unique religious pathways to

cope with stress (i.e., religious coping processes), and that religion can imbue with sacred significance the destinations that people strive to reach by means of coping processes" (Mahoney, Pendleton, and Ihrke, 2006, p. 342).

Under which coping dimension (i.e. engagement vs. disengagement) religious coping should be categorized remains unclear. For example, one definition presented in Pargament's model defines religious coping as "a search for significance in times of stress in ways related to the sacred" (Mahoney, Pendleton, and Ihrke, 2006, p. 342). The word *search* makes religious coping an active strategy. In this context, religious coping can fall under the engagement coping category.

It is important to note that the result for religious coping and onset of marijuana use was significant only for boys. Developmental psychopathology theory stresses the importance of understanding gender differences when studying adolescents. Additional findings suggest that girls are more likely to accept therapeutic help than boys (Seiffge-Krenke, 2000). This could explain why religious coping was found significant for boys, but not girls (depending on whether or not religious coping is defined as an engagement coping strategy). Gender differences could contribute to other diverging results reported. For example, Wills and Filer (1996) found that the use of the disengagement coping dimension expedites the onset of substances, whereas this study did not find denial to have significant results with any of the substances. In light of this study's findings, it is important to note that if prevention opportunities exist for adolescents, it might be beneficial to tailor those programs to account for gender specific coping.

Previous literature and journal articles have reported significant results found to be insignificant in this study. The difference could be attributed to different age groups under investigation in each respective study. Coping strategies utilized by adolescents may differ from those frequently used in adulthood. For example, a study using the Humor Styles Questionnaire found results associated with adult humor could not be related to humor used in adolescence. One conclusion of the study conducted by Erickson amd Feldstein (2007) was, "For the adolescent sample, the affiliate and aggressive humor dimensions were unrelated, whereas they were positively and significantly related for adults" (p. 263). This conclusion suggests that age groups may not have concurrent results related to coping strategies.

Differences in results can be explained further by looking at limitations associated with methodology used in any particular study. For example, Wills et al. concluded that engagement coping delays the onset of substance use, finding in one study that tobacco and alcohol use were inversely related to behavioral coping (i.e. making a plan and following it) during early adolescence (Wills & Filer, 1996). These conclusions are not consistent with results in this study, where none of the tests were significant when planning was the dependent variable. The difference could be attributed to the coping measurements used. Wills and Filer (1996) did not study "planning" as a specific coping strategy, but rather lumped "planning" together with other typical behavior coping strategies (Wills and Filer, 1996).

Some studies show that the use of specific coping strategies differ by race/ethnic group. For example, one study conducted by Wills and Filer (1996)

found that an increase in stress was related to an increase in substance use over a six-month time period. Independent studies conducted in different states made it possible to conclude that this relationship was true among diverse demographic populations (Wills and Filer, 1996). The diverse sample size could contribute to the differing conclusions drawn from the study conducted by Wills and Filer. Although the Adolescent Adjustment Project had a diverse sample size, the current study was not separated by ethnicity. Inclusion of ethnicity as a variable would be valuable to strengthen results. While the Wills and Farr study drew from cross-sectional data, the data was collected on only one occasion. This makes it impossible to prove any causal relationships, or relationships, over a period of time. The study could be strengthened if the longitudinal data collected by the Adolescent Adjustment Project were used. These results would uncover exactly when adolescents start using substances and whether or not there is a shift in coping strategies used at the time of onset. This example demonstrates how different researchers can arrive at different conclusions.

One of the most significant limitations associated with any study is methodology. Sometimes researchers must, for varying reasons, choose methodologies that are imperfect. The Adolescent Adjustment Project, for example, uses data that was collected using self-report questionnaires. The limitations of this type of data collection include reduced control of what is reported, lack of monitoring (survey administrators cannot interact with respondents), and misinterpretation of survey questions (Burns and Bush, 2006). Adolescents may be prone not to disclose their answers with full honesty especially concerning topics related to or associated with personal issues such as

substance use. However, self-report questionnaires greatly reduce cost and time of research administrators. This type of study is much more feasible to conduct when a large sample size is important. In addition, the survey controls the answers of respondents that greatly impact the ability to analyze the data objectively (Burns and Bush, 2006). The results of this study on coping strategies and the onset of substance use could be strengthened if and additional methodology. The Adolescent Adjustment Project collected parent surveys in addition to adolescent surveys. This study only focused on adolescent surveys but could be strengthened if parent surveys were to be included.

Despite these limitations, this study of adolescent coping strategies and onset of substance abuse did have significant findings that can be used to enhance current literature focused on adolescence. The results can be advanced with future research by taking a closer look at gender differences with an equal sample size for boys and girls. Controlling gender sample size for each coping strategy would strengthen the sample, providing more consistent numbers to test coping strategies against. For example, it would be easier to see how denial influences the onset of tobacco use by each gender if there were an equal number of girls and boys reporting on tobacco use. The current sample size is sufficient to be considered significant however, the sample size is drastically reduced when divided by gender. The larger the sample size the better.

The significant results for religious coping in this study provide insight on ways in which the onset of substance use can be delayed. From this study, the conclusion can be made that religious coping is associated with onset of alcohol use for boys and girls, and the onset of marijuana use for boys.

CONCLUSION

This study, Adolescent Coping Strategies and Onset of Substance Abuse, is important to broader society, because it contributes to current literature focused on the onset of substance use. The results acknowledge that there are important gender differences in the use of coping strategies. Many articles ignore gender differences and simply focus on the relationship between coping strategies to onset of substance use. Information on gender differences could help tailor substance use prevention services to more effectively serve the clientele. Recognizing that boys and girls do not cope with problems the same way, or go through adolescence with the same mindset, will help in understanding why some adolescents go through the transitional time period without harm and some do not. Keeping in mind the developmental psychopathology approach, prevention strategies can be formulated and implemented based on what types of coping strategy works for the specific child. Cicchetti and Rogosch (2002) explain how individuals play an active role in their development if presented and equipped with the proper tools and information on how to develop coping strategies.

Again, using the developmental psychopathology approach, prevention strategies can be enhanced by early detection of abnormal behavior (Masten, 2007). Effectively implemented programs can facilitate the development of new coping skills during the adolescent time period (Cicchetti and Rogosch, 2002). Seiffge-Krenke (2000) address the capacity for change, explaining, "Subjects who changed over time from approach to avoidant coping

displayed a significant increase in depressive symptoms, whereas depression decreased in subjects who switched from avoidant to approach-oriented coping over a one-year period" (p. 678). Learning these strategies can lower risk for developing patterns of drug use early in life.

The finding that religious coping is significant for both for boys and girls has implications for faith-based organizations working with teenagers. Organizations can use the research to back their prevention/intervention strategies focused on promoting the well-being of adolescents. Prevention and intervention opportunities exist during adolescence, because it is a time of psychological and biological reorganization. Steinberg and Morris (2001) discuss future directions, explaining, "Interventions designed to improve social competence and social skills have been found to improve adolescents' abilities to get along with peers" (p. 94). Emphasis should be on how best to promote psychological autonomy by effectively meeting the emerging challenges of adolescence. Some researchers, such as Cowen (1994), have developed a framework for successful intervention. According to Cowen (1994), there are "five essential elements for promoting psychological wellness: promoting wholesome early attachments, rooting early core competencies, engineering wellness-enhancing settings, acquiring effective stress coping skills, and empowerment" (p. 15).

Wills and Filer (1996) discuss the association with coping strategies and substance use, pointing out that the stress-coping model helps explain the positive attributes of using active coping mechanisms. They suggest that it lowers the probability or engaging in substance use while using substances as a coping

dimension weakens coping ability and promotes the use of substances in the future (Wills and Filer, 1996). Adolescents engaging in a higher frequency of substance use may become aware of the coping functions substances have, even if that was not the reason for initiation in the first place (Wills and Filer, 1996). Because of this, it is important for adolescents to develop effective coping strategies before the onset of substance use. There is a need to study adolescents in the context of their environment, in addition to focusing on adolescent differences in gender, racial, and socioeconomic groups. New directions in the study of adolescence must include a diverse population of people, rather than only white, suburban middle-class teenagers (Steinberg and Morris, 2001). Such studies could go far in creating effective strategies to help vulnerable young people through the sometimes turbulent transition of adolescence into healthy, happy, and productive adulthood.

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