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THE RELATIONSHIP BETWEEN COACHING MENTORS, AGE, AND  
ADOLESCENT PROBLEM BEHAVIORS

by

Derek J. Hoke

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family, Consumer, and Human Development

Approved:

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Troy E. Beckert, Ph.D.  
Major Professor

---

Randall M. Jones, Ph.D.  
Committee Member

---

Mark F. Roark, Ph.D.  
Committee Member

---

Byron R. Burnham, Ed.D.  
Dean of Graduate Studies

UTAH STATE UNIVERSITY  
Logan, Utah

2011

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**ABSTRACT**

The Relationship Between Coaching Mentors, Age, and  
Adolescent Problem Behaviors

by

Derek J. Hoke, Master of Science

Utah State University, 2011

Major Professor: Dr. Troy E. Beckert  
Department: Family, Consumer, and Human Development

This study examined coaches as potential mentors who could influence adolescent problem behaviors. By using the National Longitudinal Study of Adolescent Health (Add Health), this study compared adolescents who self-reported not having any adult mentors in their life against adolescents who self-reported having a coach mentor in their life on various problem behaviors (i.e., sexual attitudes and behaviors, tobacco, marijuana, steroid, and alcohol use). This study also looked ages of adolescents to see what, if any, influences age presented. Results of this study indicated that in some areas coaches might have a positive effect, albeit slight. When age was analyzed it became apparent there were significant differences between younger and older adolescents' problem behaviors. Discussion addressed implications, theory, limitations, and directions for future research related to coaches as mentors of adolescents.

(90 pages)

## ACKNOWLEDGMENTS

As it turns out, finishing a thesis is quite a bit harder than I realized. After football I enjoyed the newfound freedom, making this process longer and harder than it needed to be. I owe a special thank you to everyone who stood by me, thank you for enduring.

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Derek J. Hoke

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# **CHAPTER I**

## **INTRODUCTION**

### **Adolescence**

With the average human life span of 77.8 years of age (Centers for Disease Control and Prevention [CDC], 2008a), adolescence is a relatively short part of our lives. But with all of the changes that take place in this time it is understandable that G. Stanley Hall described adolescence as a time of “storm and stress” (Hall, 1904). Adolescents go through changes in cognitive development, biological maturity, school transitions, friendship negotiations, and social pressures. This important transition from childhood to adulthood shapes individuals for the rest of their lives. To further complicate matters, for many adolescents these natural changes also bring a dramatic increase in negative risk-taking and problematic behaviors. This introduction will review areas of adolescent problem behavior such as drug use and sexual activity.

According to the Youth Risk Behavior Surveillance (YRBS) survey, a nationwide survey that examined risk-taking behaviors of young people ages 12-24, many adolescents are involved in risky behaviors (CDC, 2008b). Nationwide 75.0% of high school students had consumed alcoholic beverages (CDC, 2008b). In the thirty days before the survey, 10.5% of high school students had driven a vehicle after they had been drinking alcohol and 29.1% of students had ridden in a vehicle driven by someone who was consuming alcohol (CDC, 2008b). About half of high school students have smoked cigarettes, and 38.1% of these same students have used marijuana. Almost 4.0% of high school students have taken steroids without a doctor’s prescription (CDC, 2008b).

Many adolescents engage in risk behaviors early in their lives. About 24% of

students started drinking for the first time before the age of 13. Also before age 13, 14.2% of students had smoked a cigarette and 8.3% of students had tried marijuana (CDC, 2008b). An alarming number of students are involved with sexual behaviors as well. Nationwide 47.8% of high school seniors have had sexual intercourse, 35% were currently sexually active, and 38.5% of these sexually active youth had not used a condom during their last sexual encounter (CDC, 2008b). A little over 7% of students had sexual intercourse before they were 13. Sexual behavior was responsible for approximately 757,000 pregnancies for unwed adolescent girls aged 15-19 years (CDC, 2008b).

Many adolescents spend much of their time playing sports or participating in athletic activities. Schools provide many opportunities for adolescents to be involved with sports. Nationally, 53.6% of students attended a physical education class at least once a week and 30.3% attended a physical education class every school day. In addition to physical education classes, many schools offer students a chance to participate in school-sponsored athletic teams. Community groups sponsor other teams. Nationwide, 56.3% of high school students had played on at least one sports team in the previous 12 months. With more than thirty million adolescents participating in some form of organized sports each year, they spend much of their time in athletics (lpch.org).

With long school days, school clubs, after school activities, the mall, and fraternizing with friends, adolescents spend much of their time away from home. In 2002 DuBois, Holloway, Valentine, and Cooper (2002) found that adolescents who identify important non-parental adults in their lives report better psychological well-being, more rewarding relationships with others, academic success, and fewer problem behaviors than

their peers do. Because much of an adolescent's time is spent away from home it is important to find non-parent adults with whom adolescents can spend time. Mentoring is a great way to help adolescents' healthy development. Mentors are beneficial in helping young people succeed in the transition to adulthood, increasing academic success, and reducing behavioral problems (DuBois, Holloway, et al., 2002).

### **Mentoring**

A mentor is described as one who is a wise and trusted counselor or teacher, or an influential senior sponsor or supporter (Merriam-Webster, 2009). "Mentoring" has other definitions. Murphy, Mahoney, Chen, Mendoza-Diaz, and Yang (2005) defined mentoring as a "one-on-one relationship between an expert and a novice in which the expert guides the novice by behavioral and cognitive modeling, academic and career counseling, emotional and scholarly support, advice, professional networking, and assessment" (p. 344).

Research on adolescent mentoring distinguishes between formal and informal mentoring relationships.

Formal relationships refer to programs such as the Big Brothers/Big Sisters which attempt to match at-risk youth with adult mentors. These types of programs generally facilitate positive outcomes among youth, improving academic performance, attitudes, and relationships with friends and relatives as well as reducing problem behaviors. (McDonald, Erikson, Johnson, & Elder, 2007, p. 1329)

McDonald et al. explained that informal mentoring relationships occur naturally among youth and the adults with whom they come in contact, extended family, teachers, church leaders and coaches. These non-parental adults have received a number of labels, such as

natural mentors, very important people, role models, and significant others, but all are adults that adolescents perceive to be influential.

While research is not conclusive, many positive outcomes have been shown for youth mentoring. Many young people often attribute their success in life to an adult who came into their lives and paid attention to them (Levine & Nidiffer, 1996). Of particular interest to the policy community is the growing body of research on youth who live in high-risk environments that suggests that supportive relationships with an unrelated adult can mitigate adversities' negative effects on youth development (Rhodes, Ebert, & Meyers, 1994). Many mentoring programs exist to help underprivileged youth. Communities set up programs such as Big Brothers/Big Sisters to help adolescents by giving them role models.

These programs may find success for many of their participants but many are left behind in a number of ways. One major problem is the risk of "drive-by" mentoring. Drive-by mentoring occurs when mentors swoop in from a locale unknown to the child, spend a short time, and vanish, leaving the child behind in a number of ways (Florida Mental Health Institute, 1995). According to Freedman (1993), two barriers prevent successful mentor-youth matches; limited time to devote to the relationship and social distance. The limited time of busy individuals like lawyers, physicians, and other professionals accentuates the problem. Adolescents need mentors that are willing to devote time and provide lasting relationships.

### **Coaches**

One major source for mentorship that is often over looked is coaching. Coaches

are natural mentors who often volunteer their time to help adolescents. Those who coach for a profession usually do not make very much money except at elite places.

Sports for children and youth are so popular in the United States that they have become a part of the American culture (Martens & Seefeldt, 1979). Each year, an estimated 40 million American youths are involved in sports that are organized and supervised by adults, and 56.0% of all 5- to 10-year-olds play sports (Brylinsky, 2002). Sporting opportunities for adolescents are available on many levels from little league and community teams through high school varsity and college teams for almost every popular American sport. This scope of participation requires many coaches on all levels of participation.

There are 3.1 million coaches working in all levels of youth sport (Clark, 2000), roughly 500,000 of whom are in high schools. According to the Bureau of Labor Statistics (2009), professional coaches and scouts held only 217,000 jobs in 2006. American sport programs at all levels remain dominated by the remaining 2.3 million amateur coaches (Clark, 2000).

The people typically involved in coaching do it because they enjoy helping and teaching adolescents. For the minority of compensated coaches, their income tends to be less than many other occupations. The level or prestige of coaching level influences income. On the upper end, college and university coaches average \$37,530 to the lower end, held by elementary and secondary school average of \$21,960 (Bureau of Labor Statistics, 2009).

## Theory

Lev Vygotsky (1896-1933) was the author of what we know as cultural historical theory. Vygotsky was a Russian-born theorist who came from a Marxist perspective. He grew up with a deep appreciation of both developmental and environmental forces in theory (Davydov & Kerr, 1995). Vygotsky tried to create a theory that would incorporate both lines of development (Mariage, Englert, & Garmon, 2000). He was working on this theory when he suffered an early death.

Vygotsky postulated that human learning was derived from culture, society, and history (Davydov & Kerr, 1995). Vygotsky is known for his work on speech and special education; but his work on scaffolding and his idea of the zone of proximal development apply best to mentoring. In his theory, Vygotsky suggested methodological procedures for the classroom that apply to mentoring. Vygotsky defined those who are to teach as the “More Knowledgeable Other (MKO).” These MKO’s are people that have a better understanding or a higher ability level than the learner, particularly in regards to a specific task, concept, or process (Mariage, Englert, & Garmon, 2000). Traditionally the MKO is thought of as a teacher or older adult, but this is not always the case. “In Vygotskian perspective, the ideal role of the teacher is that of providing scaffolding (collaborative dialogue) to raise the student's competence on tasks within their zones of proximal development” (Hamilton & Ghatala, 1994, p. 277).

There is a gap between a child’s actual development and his potential ability when assisted (Davydov & Kerr, 1995). Vygotsky labels this gap the zone of proximal development. This zone helps a teacher to be able to know what a child is able to learn

under supervision and what is past his/her ability to learn. During scaffolding, the first step is to build interest and engage the learner. Once the learner is actively participating, the given task should be simplified by breaking it into smaller subtasks. During this task, the teacher needs to keep the learner focused, while concentrating on the most important ideas of the assignment. One of the integral steps in scaffolding consists of keeping the learner from becoming frustrated. The final task associated with scaffolding involves the teacher modeling possible ways of completing tasks, which the learner can then imitate and eventually internalize (Feden & Vogel, 2006).

Coaches, as mentors of adolescents, are a good fit within Vygotsky's theory. A coach is usually an older, more knowledgeable person that imparts knowledge about sports and many other life lessons. One of the ways that a coach could help his/her athletes reach their potential is through scaffolding. When a coach controls the parts of a task too hard for the player, it allows the athlete to focus on the elements within his or her ability level. As the athlete learns, the coach's control lessens, allowing the player to have control over more of the task. As coaches mentor children, they have the potential to influence many aspects of an adolescent's life.

### **Purpose Statement and Research Questions**

The purpose of this study is to explore the relationship between the presence of a coach mentor and the amount of self-reported risk-taking behaviors among adolescents ages 12-24. In 2001 and 2002, J. Richard Udry, from the Carolina Population Center at the University of North Carolina at Chapel Hill, led a team of investigators in Wave III of the National Longitudinal Study of Adolescent Health (Add Health). It was in this third

wave of data collection that a series of questions were asked to young people ages 18 to 26 relating to mentors in their life. Respondents acknowledged having an influential mentor in their life since age 14, identified the nature of the relationship with them (i.e., coach), reported their frequency of contact, and self-assessed their relationship closeness (Udry, 2003). This line of questioning about mentors, specifically involving coaches, and later questions associated with adolescent risk-taking behaviors make this data set a potentially powerful source of information. It is for these reasons that this study will be utilizing the Add Health data. Using this Wave III data (2001-2002) from Add Health to identify individuals who identified a coach mentor in their youth, this study will use data from each wave of collection to address the following research questions:

1. To what degree do adolescents with an identified coach mentor vary in problem outcome areas from adolescents without a mentor?
  - a. Drug use (specifically alcohol tobacco (cigarettes), marijuana, and steroids?)
  - b. Sexual behavior?
2. How much variation is there in the aforementioned problem outcome areas between younger adolescents (15 years and younger) and older adolescents (16 years and older) regardless of mentor status?

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **Introduction**

This chapter provides a brief review of the literature as it pertains to trends and issues relative to problem behaviors involving drug use (tobacco through cigarette use, marijuana, alcohol, and steroids) and sex. After this brief review of specific problem behaviors, detailed information will be shared related to mentoring and coaching. Finally, a chapter summary will connect coaches as mentors and their potential to assist in reducing adolescent problem behavior in accordance with the stated research questions for this study.

#### **Drug Use**

For this study, drug use is operationally defined as alcohol consumption, tobacco use through cigarette smoking, marijuana use, and illegal steroid use. Tobacco, alcohol, and drug use are some of the most prevalent youth risk behaviors (U.S. Department of Health and Human Services Substance Abuse and Mental Health Services, 2000). There is evidence that drug problems surface more quickly when use starts before adulthood. A recent study confirmed an excess risk of developing dependence when extra-medical drug use starts before age 18 versus during adulthood (Chen, Storr, & Anthony, 2009). A recent survey by the CDC (2008b) indicated that, of high school seniors, approximately 70.0% have used tobacco; 75.0% have consumed alcohol; 38.0% have used marijuana; and about 4.0% have used illegal steroids.

The use and abuse of drugs have many ramifications including substantial personal and societal costs (World Health Organization, 2001). Researchers have shown the negative effects of substance abuse on an adolescent's physical and psychological well-being (Schulenberg, Maggs, & O'Malley, 2003). Researchers have also found drugs to be correlated with declining educational achievement (Fergusson, Horwood, & Beautrais, 2003), high-risk sexual behaviors (Middleman, Faulkner, Woods, Emans, & DuRant, 1995), eating disorders (Elliot & Goldberg, 1996), suicide (Middleman et al., 1995), increased welfare dependence (Degenhardt, Chiu, Sampson, Kessler, & Anthony, 2007), reduced income at age 25 (Degenhardt et al., 2007), and reduced life satisfaction (Fergusson & Boden, 2008). A deeper look at the specific issues related to each substance of consideration in this study is presented below.

### **Tobacco**

Although the vast majority of morbidity and mortality caused by tobacco use occurs in adulthood, the initiation of tobacco use and the development of addiction typically occur during adolescence (U.S. Department of Health and Human Services, 1994). More than 80% of adult tobacco users started smoking regularly before they reached 18 years of age (U.S. Dept of Health and Human Services, 1994). Nationwide, 14.2% of students had smoked a whole cigarette for the first time before age 13 years (CDC, 2008b). Nationwide, 50.3% of students had at least tried cigarette smoking (CDC, 2008b). In addition to a host of negative health consequences for adolescents who smoke, smoking is also associated with several other risk behaviors such as increased use of illicit drugs, fighting, and engaging in unprotected sex (Milton et al., 2004).

Adolescent tobacco use was on the rise during the 1990's and peaked in 1997 when the Youth Risk Behavior Survey estimated the rate of tobacco use at 42.7%, with cigarette use estimated at 36.4% (CDC, 2008b). In recent years there has been a general decline in adolescent tobacco use. The most recent national YRBS survey reports that 25.7% of students currently use tobacco with 20.0% of the students smoking cigarettes (CDC, 2008b).

The YRBS reports that the prevalence of current cigarette use was higher among male (21.3%) than female (18.7%) students. Overall, the prevalence of current cigarette use was higher among White (23.2%) than Hispanic (16.7%) and Black (11.6%) students. Among the 20.0% of students nationwide who currently smoked cigarettes, 10.7% of students had smoked more than 10 cigarettes per day on the days they smoked during the 30 days before the survey. Of these, 49.7% had tried to quit smoking cigarettes during the 12 months before the survey (CDC, 2008b).

Twelfth-grade daily smoking correlates positively with those who will become established smokers in adulthood (Burt, Dinh, Peterson, & Sarason, 2000). Unfortunately, efforts to develop and test effective school-based smoking prevention programs have generally reported a disappointing failure to achieve lasting, significant reductions in teen smoking rates (Burt et al., 2000). Individual differences in personality might provide clues to the likelihood of smoking. Several cross-sectional studies have reported higher frequencies of certain personality measures among adolescents who smoke than among those who do not. Kellam, Ensminger, and Simon (1980) reported that shyness and aggressiveness, particularly in combination predicted smoking 10 years later among 1,242 first graders from a poor, predominantly black neighborhood in

Chicago. Burt et al. (2000) looked at how personality variables measured at 5<sup>th</sup> grade predicted daily smoking in the 12<sup>th</sup> grade. The researchers studied a group of 3,130 fifth graders and found significance in measures of rebelliousness, risk-taking, fragile self-esteem, and weak refusal skills. Cherry and Kiernan (1976) reported that in data obtained from 16-year-olds in a British birth cohort, neuroticism and extroversion were also related to smoking. While studying two cohorts of Bay Area students from kindergarten to 9<sup>th</sup> grade, Stewart and Livison (1966) found measures of rebelliousness associated with smoking.

## **Marijuana**

Marijuana is the most widely used illicit drug in the United States and the western hemisphere (Bolla, Brown, Eldreth, Tate, & Cadet, 2002). Although adolescents comprise a small part of the population, they account for 30.0% of all users in the United States (Substance Abuse and Mental Health Service Administration [SAMSA], 2001). Nationwide, 38.1% of high school students had used marijuana one or more times during their life with 8.3% of adolescents experimenting before 13 years of age (CDC, 2008b). Early intervention for marijuana is important because peak risk for marijuana dependence occurs at about age 17 (Wagner & Anthony, 2002).

The YRBS reports that 19.7% of high school students are currently using marijuana. Overall, the prevalence of current marijuana use was higher among male (22.4%) than female (17.0%) students. Black males reported the highest rate of marijuana use at 26.0% and white females reported the lowest rate of use at 17.0%.

Adolescence represents a period of heightened exposure to marijuana, increased

likelihood for heavy marijuana use, and perhaps a “critical period” for deleterious marijuana effects (Lane, Cherek, Pietras, & Steinberg, 2005). The National Institute on Drug Abuse (2005) reports that marijuana use may disrupt behavioral processes involving learning and motivation. Students who used marijuana reported lower grade point averages, negative attitudes towards school, reduced satisfaction with school, poor school performance, elevated rates of school absenteeism, higher rates of expulsion or suspension from school, and higher rates of school dropout (Fergusson et al., 2003).

Marijuana use has been found to be associated with reduced income at age 25 (Degenhardt et al., 2007), increased welfare dependence, reduced relationship satisfaction (Schmidt, Weisner, & Wiley, 1998), declining educational achievement (Fergusson et al., 2003), and reduced life satisfaction (Fergusson & Boden, 2008). Fergusson et al. (2003) also found marijuana use to be correlated with a greater risk of unemployment.

## **Alcohol**

Alcohol use disorders (i.e., alcohol abuse and dependence) are among the most prevalent mental disorders in the United States and are associated with substantial personal and societal costs (World Health Organization, 2001). Young people ages 18 to 29 have the highest rates of past-year alcohol abuse and dependency (Grant et al., 2004). Early alcohol use has been found to significantly predict higher levels of use later in adolescence and adulthood (Wilson, Battisich, Syme, & Boyce, 2002). According to the nationwide YRBS survey, 23.8% of students had consumed alcohol (other than a few sips) for the first time before age 13 years. Seventy five percent of high school students

have consumed alcohol, and 44.7% of students use alcohol regularly. The prevalence of current alcohol use was higher among Hispanic (47.6%) and White (47.3%) than Black (34.5%) students.

Few studies have focused on both adolescent and adult community norms and attitudes regarding adolescent alcohol use. Adolescents who perceived their parents' views toward alcohol as negative started drinking later and were less influenced by peer norms (Lintonen & Konu, 2004). Adolescent perceptions of friends' and peer drinking were also significantly related to actual use; but students were found to overestimate drinking of classmates and friends (Thombs, Wolcott, & Farkash, 2004). Alcohol-related problems during adolescence can have long-term effects on physical and psychological well-being (Schulenberg et al., 2003). Other problems of adolescent use include fatal and nonfatal injuries, overdoses, poor academic outcomes, violence, crime, unintended pregnancies, and sexually transmitted diseases (Perkins, 2002).

### **Steroids**

Anabolic androgenic steroids, first introduced to competitive athletics during the 1950s, are used because of their potential to enhance muscle strength and size (Petrocelli, Oberweis, & Petrocelli, 2008). The Youth Risk Behavior Surveillance Survey (YRBS; CDC 2008b) reported that 3.9% of students had taken steroid pills or shots without a doctor's prescription one or more times during their life. They found that the prevalence of lifetime illegal steroid use was higher among male (5.1%) than female (2.7%) students; and higher among White male (5.3%) and Black male (3.4%) than White female (2.8%) and Black female (1.0%) students, respectively (CDC, 2008b).

The National Institute on Drug Abuse (2006) noted that adolescent steroid intake is significantly higher with those participating in high school athletic programs. Steroid use is presumed to be the result of a more or less rational decision motivated by a desire to succeed in athletics (Miller et al., 2005). Durant, Ashworth, Newman, and Rickert (1994) found that male adolescents who use anabolic steroids were more likely to participate in football and wrestling. However, not all adolescent steroid users are athletes. Yesalis, Barsukiewicz, Kopstein, and Bahrke (1997) noted that steroid use has spread beyond the competitive sports community to include recreational athletes and even nonathletes. Miller, Barnes, Sabo, Melnick, and Farrell (2002) found that steroids were becoming increasingly popular with weight lifters and bodybuilders for the sole purpose of weight training. “Though these adolescents do not participate in team sports per se, they are often deeply invested in a subculture and a social network frequently composed of other, older weight lifters or bodybuilders outside the school context” (Miller et al., 2002, p. 473). Just as in team athletics, they pursue success in a structured competitive setting where routine steroid use may be an accepted, even expected strategy (Miller et al., 2002).

Adolescents use anabolic steroids to increase muscle size for cosmetic reasons and to improve strength and endurance to enhance athletic performance (Miller et al., 2002). However, serious medical and psychological complications have been associated with their use. Middleman and colleagues (1995), using data obtained from the 1993 Massachusetts Youth Risk Behavior Survey, found steroid use to be associated with high-risk sexual behaviors, suicide, and increased vehicular risk-taking. The survey sampled 3,054 students in 9<sup>th</sup> through 12<sup>th</sup> grade from 45 high schools across Massachusetts. In

addition to a host of negative behavioral consequences for adolescents who use steroids, steroid use has been associated with several other risk behaviors such as increased use of cocaine, amphetamines, heroin, tobacco smoking, and alcohol use (National Institute on Drug Abuse, 2006).

### **Sexual Behaviors**

Adolescence is a key time to study the development of sexuality and sexual behavior patterns because this is when most individuals first experience sexual intercourse (Meschke, Zweig, Barber, & Eccles, 2000). The decision to engage in sexual intercourse for the first time is an important transition during adolescence (Brooks-Gunn & Paikoff, 1997). An increasing number of American adolescents are deciding to initiate sexual intercourse at earlier ages than in past decades (Davis & Friel, 2001). Schvaneveldt, Miller, Berry, and Lee (2001) found that 76.0% of girls and 85.0% of boys have engaged in sexual intercourse before the age of 19. Brown and Flanigan (2003) found that 18-19% of adolescents lost their virginity prior to the age of 15, and the CDC (2008b) found that 7.1% of students had had sexual intercourse before 13 years of age. Among these sexually active youth, contraceptive use remained lower than for adults (Lohman & Billings, 2008). About 37.0% of adolescent girls and 51.0% of adolescent boys do not use condoms when having sexual intercourse and approximately 66.0% of adolescents had two or more partners (Alan Guttmacher Institute, 2002; CDC, 1996).

Early sexual activity can have significant personal, social, and economic consequences for adolescents in this country (Costa, Jessor, Donovan, & Fortenberry, 1995). Using the National Survey of Children, a three wave multistage stratified

probability sample of over 2,000 children in the U.S., Schvaneveldt et al. (2001) found sexual behavior at young ages puts adolescents at an increased risk for lower levels of academic achievement. Whitbeck, Yoder, Hoyt, and Conger (1999) used data from two overlapping panel studies that focused on economic hardship, family processes, and adolescent developmental outcomes. The first study was composed of a sample of 451 two-parent families recruited from the cohort of all rural seventh-grade students enrolled in public or private schools and the second panel study was based on a sample of 207 mother-headed households that included an eighth or ninth grade adolescent in Iowa. The researchers found increased levels of school problems and substance abuse associated with early sexual activity. Early sexual intercourse poses health risks to adolescents, including increased risk of contracting a sexually transmitted infection (STI) or experiencing an unintended pregnancy (Brown & Flanigan, 2003). For example, girls who have first intercourse earlier than average (between 10 and 14 years of age) tend to have more sex partners, a higher likelihood of having sex with high-risk men, and a greater risk for STI's (Meschke et al., 2000).

In the United States, 48.5 births per 1,000 adolescents occur each year, creating a series of negative consequences for both boys and girls (Ventura, Matthews, & Hamilton, 2002). Although the adolescent childbearing rate has declined over the past 20 years, this rate is higher than other industrialized nations (Lohman & Billings, 2008). Teenage pregnancy is detrimental to the health of the mother and her child and is a common public health problem worldwide (United Nations, 1989). Early childbearing has multiple consequences in terms of maternal health, child health, and over all well-being of society (Dangal, 2006). Adolescent childbearing is heavily concentrated among poor and low-

income teenagers, most of whom are unmarried (Dangal, 2006). Teenage pregnancy often disrupts the course of adolescents' lives by limiting educational and employment aspirations, opportunities, and achievements (Darroch, Frost, & Singh, 2001).

### **Summary**

As cited previously in the introductory chapter, adolescents who identify with non-parental adults in their lives reported fewer problem behaviors than their peers did (DuBois et al., 2002). Mentors have been shown to reduce problem behavior and facilitate positive outcomes for adolescents (McDonald et al., 2007). By modeling positive behaviors, coach mentors can be important non-parental adults and may assist in reducing adolescents' drug use. In addition, some investigators suggest that participating in sports and other supervised activities may prevent problem behavior (Eitle, Turner, & Eitle, 2003). It seems that coaches may be in a great position to curb adolescent problem behavior. This study hopes to increase the field of knowledge by helping understand the relationship of coaching mentors and adolescent self-reported risk-taking behaviors.

### **Mentoring**

Although the roots of mentoring are lost in antiquity, a character from the epic poem Homer's *Odyssey* inspired the word itself. The poem tells of the hero Odysseus's and his trials as he journeys home from the Trojan War. In preparation for his original departure Odysseus leaves his one-month-old son, Telemachus, in the care of his elderly friend and counselor named Mentor who was also his son's tutor (Butler, 1900). In

modern English, the tutor's name has become an eponym for a wise, trustworthy counselor or teacher (Microsoft Encarta, 2008). Mentor's situation would describe mentoring as a relationship where an older individual helps and counsels a younger person. Murphy and colleagues (2005) explain mentoring as a "one-on-one relationship between an expert and a novice in which the expert guides the novice by behavioral and cognitive modeling, academic and career counseling, emotional and scholarly support, advice, professional networking, and assessment" (p. 344).

A mentor supports the development of a learner, which includes helping the learner gain the necessary skills and knowledge to function effectively in a given environment (Murphy et al., 2005). Mentoring relationships occur in multiple environments and at all periods of life. Environments such as business, higher education, schools, athletics, religion, and extended family relationships all use mentors (Murphy et al., 2005). Volunteer mentoring programs have been advocated increasingly in such diverse areas as welfare reform, education, violence prevention, school-to-work transition, and national service (Rhodes, 2002).

Research on adolescent mentoring distinguishes between formal and informal mentoring relationships.

Formal relationships refer to programs such as the Big Brothers/Big Sisters which attempt to match at-risk youth with adult mentors. These types of programs generally facilitate positive outcomes among youth, improving academic performance, attitudes, and relationships with friends and relatives as well as reducing problem behaviors. (McDonald et al., 2007, p. 1329)

McDonald et al. (2007) have explained that informal mentoring relationships occur naturally among youth and the adults with whom they come in contact. These non-parental adults have received a number of labels, such as natural mentors, very important

people, role models, and significant others, but all are adults that adolescents perceive to be influential.

Much of the theoretical framework for current mentoring programs is influenced by the functionalist sociology of James Coleman (1961). Coleman argued that the traditional methods of socializing youth, such as schools and the family, were not working well enough. He warned that schools were failing to equip young people to enter the labor market and increasing numbers of single parent families headed by women were disastrous for many young people. As a result, Coleman explained that young people relied on peers rather than parents and were hostile to the norms of mainstream society. He theorized that mentoring programs could compensate for poor family support, rescue young people from the bad influence of negative peer groups, and assist young people in a successful transition to adulthood (Philip, 2000).

The origins of the youth mentoring movement in the U.S. can be traced to Ernest Coulter in 1904. Coulter was a former journalist who took a job at New York City's first juvenile court. In his new job he was distressed by seeing more and more boys come through his courtroom and observing the harsh fate of children in the court system. Recounting one child's story to a group of businessmen and professionals at a 1904 meeting of the Men's Club of New York City's Central Presbyterian Church, he said: There is only one possible way to save that youngster: to have some earnest, true man volunteer to be his big brother, to look after him, help him to do right, make the little chap feel that there is at least one human being in this great city... who cares whether he lives or dies. (Points of Light Institute, 2008)

Forty volunteers responded and the first organized activities of what would become Big Brothers/Big Sisters of America were underway. Over the years, it grew to 500 chapters nationwide, and became the largest and best known mentoring program in the country (Big Brothers/Big Sisters [BB/BSA], 2009). Today Big Brothers/Big Sisters of America (BB/BSA) is just one of the available youth mentoring programs and is comprised of 483

independent agencies with over 2,500 professionals and 15,000 community leaders together serving over 110,000 youth and their families (BB/BSA, 2008).

During the past two decades, mentoring programs for youth have become increasingly popular and widespread (DuBois, Holloway, et al., 2002). The National Mentoring Partnership and numerous other organizations have also contributed to significant growth in mentoring initiatives at local, state, and national levels. Currently, there are more than 1,700 organizations that support mentoring activities (DuBois, Holloway et al., 2002). Big Brothers/Big Sisters International is the most prominent of these programs with well over 500 agencies in America. Over three million young people have a Big Brother, a Big Sister, or a similar adult volunteer involved in their lives—a six-fold increase from just a decade ago—and generous federal funding continues to fuel new initiatives (Rhodes, 2008). According to Rhodes (2008), there are two and a half million youth that are involved in mentoring programs with over ten-thousand matches in the Big Brothers/Big Sisters program alone. The National Mentoring Partnership (2005) reports 3,000,000 adults have formal, one-to-one mentoring relationships with young people; an increase of 19.0% since 2002.

### **Mentoring Programs**

Today, mentoring has evolved from working with a known and trusted party to a variety of programs where adults are recruited and trained to become mentors of youth in need of adult influence. These adults may or may not have any prior connections or associations with the youth they mentor nor their families (Beam, Chen, & Greenberger, 2002; Zimmerman, Bingenheimer, & Notaro, 2002). A variety of mentoring programs

are available today. Some popular programs include Little League, Boy Scouts and Girl Scouts, Campfire U.S.A., YMCAs and YWCAs, and 4-H Clubs. Others are known only to the teens and families who participate in them—for example, programs that teach swimming and lifesaving run by a neighborhood community center, a series of studio art classes offered by a local museum for talented young artists, and math and computer enrichment programs for middle school youth sponsored by a local business (Eccles & Gootman, 2002).

### **Who Is Likely to Mentor?**

The Mentoring in America 2005 poll sheds some light on the demographics of people that are involved in youth mentoring. The poll used random sampling to create two waves of 1,000 people each. The survey found that middle-aged adults (34-54 years old) and young adults (18-24 years old) mentor at the highest rates. Older adults, especially senior citizens (65 and over) are the least likely to mentor. As young adults mature and become young professionals (25-34 years old), they tend to be less involved as mentors. As this group becomes more established, they are once again more likely to mentor; and as they move towards middle age, it is expected that their rates of mentoring will reach the highest levels. People with the most education are more likely to be mentors: 35.0% of those with a post-graduate education as compared with only 26.0% of those with a high school education or less. Employment status is also significant. Retired and unemployed people are less likely to mentor (23.0% and 22.0%, respectively) than those working full-time (32.0%). Interestingly, at 37.0%, part-time workers are most likely to mentor. Perhaps that is because of the combination of flexibility and

stability their type of employment offers. Additionally, adults in households with children are significantly more likely to mentor (35.0%), than those without (24.0%). According to the 2005 poll, men are slightly more likely to mentor (31.0%) than women (27.0%). This finding may seem inconsistent with the practical experience of many mentoring programs that confront a continuing shortage of male mentors. The study found that non-whites are somewhat more likely to mentor: 35.0% of nonwhites mentor as compared to 28.0% of whites.

### **Mentoring Outcomes**

Mentoring scholars have found a variety of outcomes, some positive and some negative. Zimmerman et al. (2002) looked at the effects that natural mentors have on the lives of urban adolescents. The researchers used a longitudinal study involving 770 adolescents in a large Midwestern city. They found that almost 54.0% of youth surveyed indicated they had a natural mentor, and those with mentors reported engaging in fewer problem behaviors and having attitudes that are more positive toward school (Zimmerman et al., 2002). Powers, Sowers, and Stevens (1995) studied 10 students, ages 12-19 with severe disabilities, who received a mentor whom also had physical challenges. In this qualitative study, the researchers found that interaction with mentors did result in some behavior change for students. Mentors reported that their mentees (a) learned how to conquer disability-related barriers, (b) became more positive about their capabilities and future potential for independence, (c) became more self-reliant, and (d) expressed increased interest in working, going to college, and living in their own homes. Following interaction with their mentors, students expressed increased confidence in their abilities

to perform specific community-based activities and to overcome disability-related barriers to independence. These findings suggest that mentoring is an effective methodology for the communication of both knowledge and inspiration to students with physical challenges.

DuBois and Silverthorn (2005) used the Add Health data to study the impact of natural mentoring relationships on health related outcomes of adolescents. The data revealed that youth who reported a natural mentoring relationship were more likely to exhibit favorable outcomes in the areas of education/work, problem behavior, psychological wellbeing (i.e., heightened self-esteem and life satisfaction), and physical health (i.e., greater, physical activity level, birth control use). The researchers also found youth who were in mentoring relationships that lasted a year or longer reported improvements in academic, psychosocial, and behavioral outcomes. The results of this study are consistent with the view that mentoring relationships facilitate positive gains in the health and well-being of developing youth (DuBois & Silverthorn, 2005).

Grossman and Tierney (1998) found tangible benefits for youth in mentoring relationships. The researchers studied 1,138 youth from eight BB/BS agencies across America over a 17-month period. These adolescents were in mentoring relationships that met at least 3 times a month at 3 to 4 hours per meeting. The results showed that these mentees were less likely to have started using drugs and alcohol, felt more competent about doing schoolwork, attended school more, got better grades, and had better relationships with parents and peers than they would have had they not participated in the program.

## **Key Components of Successful Mentoring**

Many factors influence the effectiveness of mentoring. The research indicates that one of the key determinants of effectiveness is relationship duration. Grossman and Rhodes (2002) studied 1,138 youth from the network of over 500 BB/BS local agencies. They randomly assigned applicants to either a treatment or control group, administering questions at baseline and 18 months later. The researchers found that positive effects on youth outcomes became progressively stronger as relationships persisted for longer periods. However, the study also revealed that youth who were in a relationship that terminated within 3 months reported drops in self-worth and perceived scholastic competence. In line with the previous study, Dubois and Silverthorn (2005) used Waves I and III of the Add Health data set and found that natural mentoring relationships that endure for multiple years have also shown the strongest effects. Long-term ties provide opportunities for stronger and more influential bonds to develop between mentors and youth (DuBois & Silverthorn, 2005). However, duration alone is not sufficient, as a relationship could be long lasting yet participants may meet only sporadically. Regular contact over time is important, and can enhance the mentee's feelings of security and attachment in the mentoring and other important relationships (Rhodes, 2005). DuBois, Holloway, et al. (2002) found relationship longevity, closeness, clear expectations, a focus on instrumental goals, and ongoing support to volunteer mentors led to positive effects on youth outcomes.

Several additional factors associated with better outcomes include the background characteristics of the mentor and the effectiveness of the mentor in addressing the developmental needs of the child. DuBois, Neville, and colleagues (2002) found prior

experience in helping roles or occupations beneficial. Hirsch (2005) found an ability to demonstrate appreciation of salient socioeconomic and cultural influences in the youth's life enrich the mentor process. DuBois, Neville, Parra, and Pugh-Lilly (2002) found a sense of efficacy for being able to mentor young people translated to better outcomes. The ability to model relevant behaviors, such as skills required for job performance in work settings, appears to be of further benefit (Hamilton & Hamilton, 2005). Beam, Gil-Rivas, Greenberger, and Chen (2002) found refraining from actions (e.g., substance use) that may encourage youth to adopt unhealthy behaviors would help mentees.

Researchers have shown relationships that are youth-centered, as opposed to being driven primarily by the interests or expectations of the mentor, could predict greater relationship quality and duration (Herrera, Sipe, & McClanahan, 2000). A youth-driven approach, however, needs to be balanced with structure and goals (Rhodes, 2008). Langhout, Rhodes, and Osborne (2004) found that outcomes were most favorable when youth reported experiencing both structure and support from their mentors. By contrast, no benefits were evident for an unconditionally supportive relationship type, thus suggesting a need for mentors to be more than simply "good friends." Attunement to the needs and interests of the youth and the ability to adapt his or her approach accordingly are also important indicators of relationship effectiveness (Spencer, 2006).

### **Coaching**

The research that has been conducted over the past two decades in the area of coaching has primarily focused on coaching effectiveness and identifying coaching characteristics, leadership styles, and behavioral patterns that are most effective to

successful coaching. Many of the research studies have defined an “effective coach” as one who elicits either successful performance outcomes or positive psychological responses on the part of his or her athletes (Horn, 2002).

By accepting a coaching position, adults take on many roles and responsibilities. The book “Guidelines for Children’s Sports” (Martens & Seefeldt, 1979) explains that a coach is also an organizer, planner, teacher, role model, winner, first aid medical consultant, motivator, developer of fitness, disciplinarian, character developer, parent, counselor, mentor, and friend. By filling these roles coaches may influence adolescent development in many ways, including physical performance and psychosocial well-being. Because of this assumed responsibility, it is important for effective coaches to attune themselves to the personal and individual needs of their athletes. Effective coaches are those who are prepared to meet the individual needs of their athletes and realize that they can make a difference in the team’s performance by improving their own coaching skills and understanding the effect that their behavior can have on their athletes (Anshel, 2003). This section will present existing literature in areas of coaching efficacy, and coaches’ influence.

### **Coaching Efficacy**

The main medium which coaches exert their influence on sport participants is through their own behaviors. Coaches who have a positive impact on athletes engage in effective behaviors (Kavussanu, Boardley, Jutkiewics, Vincent, & Ring, 2008). Effective coaching behaviors are those that result in successful performance and positive psychological outcomes in athletes such as elevated perceived ability, self-esteem, and

environment (Horn, 2002). Thus, effective coaches can have an influence on different aspects of the athletic experience. Feltz, Chase, Moritz, and Sullivan (1999) proposed that certain desirable outcomes for both coaches and athletes should result from high levels of coaching efficacy. Coaching efficacy is the extent to which coaches believe that they have the capacity to influence the learning and performance of their athletes and consists of four dimensions: motivation, game strategy, technique, and character building (Feltz et al., 1999). Motivation efficacy pertains to the coaches' confidence in their ability to influence the psychological skills and states of their athletes. Game strategy refers to the coaches' belief in their ability to coach and lead their team to a successful performance during competition. Technique efficacy is the coaches' beliefs regarding their instructional and diagnostic skills, while character building efficacy concerns the coaches' beliefs in their ability to influence their athletes' personal development and positive attitude toward sport (Kavussanu et al., 2008).

To examine coaching efficacy, most researchers have used the Coaching Efficacy Scale (CES; Feltz et al., 1999), which is a 24-item scale used to measure dimensions of coaching efficacy: motivation (7 items), game strategy (7 items), technique (6 items), and character building (4 items). Several variables influence coaching efficacy. Feltz et al. (1999) surveyed the coaching efficacy of 517 high school head coaches in the Midwest. All team sports were represented and an equal number of men and women were surveyed. They found that coaching experience, prior team success, perceived skill of one's athletes, and perceived social support from school, community, and the athletes' parents influenced coaching efficacy. The researchers also found perceived community and parental support were positively linked to coaching efficacy in male high-school

basketball coaches. Marback, Short, Short, and Sullivan, (2005) studied the self-efficacy of 187 intercollegiate coaches from all NCAA ranks. The researchers found coaching experience significantly predicted character building, motivation, and game strategy efficacy. Kavussanu et al. (2008) surveyed the 26 head coaches and their 291 athletes from a British University. The researchers found that years of coaching positively predicted technique efficacy. Myers, Vargas-Tonsing, and Feltz (2005) surveyed 179 college coaches from the Midwest. The study revealed career-winning percentage predicted game strategy efficacy, and perceived team ability and social support from athletes' parents predicted motivation and character building efficacy.

Researchers have also identified sex differences in coaching efficacy. In a previously described study, Marback et al. (2005) found male intercollegiate coaches reported higher game strategy efficacy than their female counterparts. The study also showed male coaches considered themselves less efficacious with regard to their character building abilities than females. In line with previous research, Kavussanu et al. (2008) found male coaches reported significantly higher beliefs in their ability to coach and lead their team to a successful performance during competition than female coaches.

### **Coaches' Influence**

One of the special benefits of children's sports is the relationships that can develop between coaches and athletes (Martens & Seefeldt, 1979). Coaches are considered influential individuals in athletes' lives. Coaches can positively affect athletes' performance, behavior, and psychological and emotional well-being (Horn, 2002). Many adults believe that involvement in sports is not an end in itself but that

sports are an avenue through which many other lessons can be taught and values can be learned (Martens & Seefeldt, 1979). Athletes have historically stated that the greatest benefits they obtained from sports were not necessarily the physical skills or physical fitness that are so commonly mentioned, but the lessons and values they learned because their coach took the time to place athletics into a proper perspective (Martens & Seefeldt, 1979). This perspective of sports, as a vehicle through which important lessons are learned, was of value to athletes far beyond their days on the field, floor, court, or pool. Successful coaches must prepare themselves for the special and challenging relationship that can exist between a coach and athlete (Martens & Seefeldt, 1979).

The Handbook for Youth Sports Coaches (1979) explains a possible challenging relationship:

Because many of your athletes may be growing up in single-parent families, you may be called upon to provide the kind of support that is customarily provided by the missing parent. Perhaps your role will be that of friend, counselor, teacher, intermediary between the child and another adult, or advocate for the child's welfare. (p. 20)

Many people see coaching as merely instructing athletes in an area of sports. There is much more to coaching than what meets the eye. Coaches can be influential in all aspects an adolescent's life. Among many other things, coaches may help adolescents by being a friend, being a confidant, encouraging academic achievement, helping to get into college, motivating to be in better shape, assisting in increasing confidence, being a protector of home life, helping with career aspirations, helping to abstain from problem behaviors, and pushing toward your goals. Athletes often look up to their coaches and view them as a very knowledgeable ally. Coaches represent a potential good fit to help

mentor young people toward positive risk-taking behaviors and away from negative risk-taking behaviors.

## CHAPTER III

### METHODS

#### Data

The purpose of this study is to explore the relationship between the presence of a coach mentor and the amount of self-reported problem behaviors among adolescents ages 12-24. This study will help determine whether coaches are a significant and important means of assisting adolescents cope with or altogether avoid “storm and stress” as seen through particular outcome areas. To accomplish this, a nationally representative data set from the national Longitudinal Study of Adolescent Health (Add Health) will be analyzed (Udry, 2003).

Add Health (Udry, 2003) is a nationally representative study that explores the causes of health-related behaviors of adolescents in grades 7 through 12 and their outcomes in young adulthood. The focus of the Add Health project was to examine how social contexts (families, friends, peers, schools, neighborhoods, and communities) influence adolescents’ health and risk-taking behaviors (Harris et al., 2003), which makes it an appropriate fit for this study’s research questions.

The Add Health project began in 1994 funded by the National Institute of Child Health and Human Development (NICHD) with co-funding from 17 other federal agencies. The Add Health project has been described as the largest, most comprehensive survey of adolescents ever undertaken (Harris et al., 2003). Add Health now consists of three separate waves of data tracking of the same group of adolescents along their development, with a fourth wave yet to come. Wave I data were collected between the

years 1994-1995. Wave II data collection occurred in 1996, and Wave III data were collected in 2001-2002 (Harris et al., 2003). Information gathered in Wave III addresses most specifically issues for which this study is concerned relating to coaches as mentors and adolescent problem behaviors. To understand better why this extant data set is a worthwhile choice to answer the research questions for this study an overview of the entire Add Health design is appropriate.

### **Add Health Design**

Data collection began in 1994 with the selection of a nationally representative sample of male and female adolescents in grades 7 through 12. The primary sampling frame consisted of all of the high schools in the United States, with an 11<sup>th</sup> grade and at least 30 students. They selected eighty high schools from a sampling frame of 26,666. Prior to sampling, they sorted schools by size, school type, census region, level of urbanization, and percent of the school's population that was Caucasian. Of the original 80 schools selected, 52 were eligible and agreed to participate. They replaced the remaining 28 schools with similar high schools matching satisfaction criteria. When a high school was recruited, its feeder schools with a seventh grade were also identified and selected with a probability proportional to the number of students it sent to the high school. Add Health included 145 middle, junior, and high schools in its main sample. Schools varied in size from less than 100 students to more than 3,000 students (Harris et al., 2003).

During one class period, on one day, in the 1994-1995 school year, students were asked to complete a 45-minute self-administered questionnaire. The questionnaire

consisted of questions addressing the student's background, parent information, friends, schoolwork, activities, general health status, and health behaviors. From a list of students who completed the in-school questionnaire and school rosters (which included those absent on the day of the administration of the questionnaire), a random sample of 16,000 adolescents was selected to participate in a 90-minute in-home interview. Add Health refers to this sample of 16,000 as its core sample to distinguish it from the grand sample that includes oversamples identified from the in-school questionnaire (Harris et al., 2003).

Wave I in-home interviews were conducted late in 1995 and were completed with 80% of those selected. Those who completed the in-home interview form a final core sample of 12,105. The oversampled adolescents included in the Wave I grand sample of 20,745 adolescents included those who were race/ethnic minorities, adolescents with limb disabilities, sibling pairs, and 16 schools where every student was interviewed. A computer-assisted personal interview technique (CASI) was used to administer the in-home interview in an effort to increase the response accuracy to sensitive questions dealing with such items as relationships, delinquency, and sexual behaviors. CASI allowed the students to listen to prerecorded questions through earphones and enter their responses directly into laptop computers. Other researchers found that this technique minimized potential interviewer and parental effects on adolescent responses (Turner et al., 1998).

Interviewers asked one parent or guardian to be interviewed simultaneously with the adolescent. Parent interviews provided further information about family composition and the adolescent's health history. Parent surveys asked demographic and health-related

information about the parent or guardian, and general questions about the adolescent respondent. Approximately 83% of the parents participated in the parent survey for a parent sample of 17,125 (Harris et al., 2003).

Researchers collected the Wave II data in 1996 from a sample taken from the grand sample of Wave I participants. In Wave II, a majority of the 12<sup>th</sup>-grade respondents were removed from the sample because they exceeded the maximum grade eligibility requirement. There were also no parent interviews conducted during this wave of data collection (Harris et al., 2003).

In 2001 and 2002, they re-interviewed Add Health respondents 18 to 26 years old, in a third wave designed to obtain relationship, marital, childbearing, and educational information. New sections focused on topics more relevant to young adults. Because respondents were older in Wave III, the social environment shaping their experience was different from those in earlier waves. For many, college or work contexts were likely to be more important. Relationships with romantic partners likely were more influential as respondents consider and make decisions about cohabitation and marriage and effects from the family may be less pronounced. Researchers designed Wave III to provide data on those new aspects of young adult life, allowing researchers to identify change over time (Harris et al., 2003).

From the original Wave I grand sample, researchers obtained adequate Wave III data from 15,170 respondents, who represent 73% of the original grand sample (Harris et al., 2003). In Wave III, the interviewer administered an in-home interview with sections containing sensitive questions being asked in a self-administered manner similar to Wave I. Respondents, who agreed, also provided a urine/saliva sample to test for certain STD's

and to provide certain genetic markers for the study of sibling pairs. Respondents received an additional financial incentive for providing a urine/saliva sample. Also new to Wave III, researchers gathered data from 1,507 romantic partners to explore the transition of relationships between adolescence and young adulthood (Harris et al., 2003). It is in this third wave of data collection that researchers asked specific questions relative to mentoring, clarified contact frequency with and closeness to those mentors, and consequently identified coaches as a subgroup of mentors of these adolescents. As described previously, researchers addressed health and risk-taking behaviors in multifarious ways.

In an effort to protect the identity of research participants, full access to data is limited. To assist public use, the Add Health research team randomly selected from their core survey population a representative sample for others to use in research (McKean & Card, 2003). Because this study asks the research questions relating to coaches as mentors and addresses risk-taking behaviors of adolescents in previous waves, it was necessary to purchase all three waves of the public-use data set consisting of 4,882 respondents to utilize for analysis.

### **Mentoring Coaches**

Mentoring is only addressed in Wave III (2001-2002) of the Add Health study and is included under the topic area of “Guidance/Counseling” (McKean & Card, 2003, p. 46). Participants ranged in age from 18 to 28 years when Wave III data were collected. They were asked to look back at their life experiences and respond to the question, “Other than your parents or step-parents, has an adult made an important

positive difference in life at any time since you were 14 years old?” If an answer of “yes” was given ( $n = 3,722$ ), that question was then followed by, “How is this person related to you? If there has been more than one person, describe the most influential.” The number of participants who answered “no” to having an adult mentor in their life was 1,145.

The current study will compare outcomes in problem behaviors of adolescents without mentors to adolescents who self-reported having a coach mentor. One challenge to that interest was that the self-reported problem behaviors were identified approximately eight years prior to the time when the mentoring relationship was identified. To improve the validity of this study, it was important to connect this mentoring relationship declared at Wave III (2001-2002) to the time when the behaviors were reported by the adolescents at Wave I (1993-1994). In Wave III participants who self-reported having an influential adult mentor were also asked, “How old were you when {HE/SHE} first became important in your life?” Responses to that question bridged the time gap. This study only included for analysis respondents who indicated that the relationship with their identified coach mentor, as declared at Wave III, had begun at least at the time the problem behavior was self-reported at Wave I. This delineation among adolescent participants resulted in a sub-sample of 113 male adolescents who identified a male coach-mentor who was important in their life between the ages of 12 – 19 years of age for evaluation to be used for analysis in this study from the original 4,867 participants in the representative Add Health data set. A comparative group of approximately 100 male participants was randomly selected using a stratified approach, limiting gender to male participants, from the 1,145 respondents who indicated that they did not have a mentor during their teenage years. Table 1 contains a brief description of

the participants for this study.

### Negative Risk-taking Behaviors (Dependent Variables)

Following questions about mentoring wherein coaches were identified, this study analyzed the dependent variables of adolescent problem behaviors and attitudes identified as drug use (evidenced as self-reported alcohol, steroids, tobacco, and marijuana use), and sexual behavior (evidenced as self-reported vaginal intercourse).

### Sexual Attitudes and Behavior

To address adolescent sexual behaviors, this study used the Add Health interview questions from Wave I; “If you had sexual intercourse, your friends would respect you

Table 1

*Demographic Characteristics of Add Health Participants Without Mentors and Those With a Coach Mentor During Adolescence*

Variable	Wave I	Wave III	No Mentors		Coach Mentor	
			(n = 13)	%	(n = 13)	%
Age						
	13-14	18-19	7	6.19	11	9.74
	15	20	23	20.36	14	12.39
	16	21	16	14.16	21	18.59
	17	22	21	18.59	17	15.04
	18	23	18	15.93	31	27.43
	19	24	17	15.04	14	12.39
	20	25	7	6.19	5	4.42
	20-23	25-28	4	3.54	0	0
Total			113	100	113	100
Race/ethnicity						
American Indian/Native American			3	2.65	1	0.88
Asian/Pacific Islander			6	5.31	6	5.31
Black/African American			29	25.67	30	26.55
Hispanic/Latino origin			14	12.39	13	11.51
White			49	43.36	58	51.33
Other			12	10.62	5	4.42
Total			113	100	113	100

more?"; "If you had sexual intercourse, afterward, you would feel guilty?"; "If you had sexual intercourse, it would give you a great deal of physical pleasure?"; "If you had sexual intercourse, it would make you more attractive?"; "If you had sexual intercourse, you would feel less lonely?"; "If you had sex, you will lose partner respect?"; "If you have sex, it would upset your mother?"; and "If you have sex, would it be relaxing?" Possible answer choices for each of these questions were on a 5-item Likert scale with 1 = *strongly agree* to 5 = *strongly disagree*. The next questions were, "Have you ever had sexual intercourse? When we say sexual intercourse we mean when a male inserts his penis into a female's vagina," and "In what year did you have sexual intercourse for the very first time?" Answers to these questions were 0 = *no* and 1 = *yes*, and the specific number of sexual partners as identified by the participants.

Wave II questions regarding sexual behaviors and attitudes include: "If you had sexual intercourse, your friends would respect you more?"; "If you had sexual intercourse, afterward, you would feel guilty?"; "If you had sexual intercourse, it would give you a great deal of physical pleasure?"; "If you had sexual intercourse, it would make you more attractive?"; "If you had sexual intercourse, you would feel less lonely?"; "If you had sex you will lose partner respect?"; "If you have sex it would upset your mother?" Possible answer choices for each of these questions were on a 5-item Likert scale with 1 = *strongly agree* to 5 = *strongly disagree*. The last two questions of Wave II were "Have you taken a pledge to remain a virgin?" and "Have you ever had sex?" with the answer choices being 0 = *no* and 1 = *yes*.

## **Tobacco**

To obtain information relating to adolescent tobacco use, this study used the following Wave I Add Health interview questions, “Have you ever tried cigarette smoking, even just one or two puffs?” Participants answer choices were 0 = *no* and 1 = *yes*. “How old were you when you smoked for the first time?” Possible answers ranged from 1 to 20 years old. The next question was “Have you ever smoked cigarettes regularly-that is, at least one cigarette every day for 30 days?” Response choices were 0 = *no* and 1 = *yes*. “How old were you when you first started smoking cigarettes regularly (at least one cigarette every day for 30 days)?” Possible answers ranged from 1 to 18 years old. In regards to chewing tobacco the researchers asked, “In the past 30 days how many times have you chewed tobacco?” and “How old were you when you used chewing tobacco or snuff for the first time?”

## **Marijuana**

To assess adolescent marijuana use, this study used the Wave I Add Health interview questions: “How old were you when you tried marijuana for the first time?” Possible answers ranged from 1 to 18 years or older.” A second question used asked, “During your life, how many times have you used marijuana?” Possible answers were the specified whole number of times using marijuana as self-reported by participants. The last question we used asked, “During the past 30 days, how many times did you use marijuana?” with possible answers ranging from 0 - 900. Wave II later asked the following “In the past 30 days how many times have you smoked pot?” Possible answers ranged in whole number of times participants used marijuana in the previous 30 days.

## **Alcohol**

To assess adolescent alcohol use, this study used the following Add Health interview questions, “Have you had a drink of beer, wine, or liquor- not just a sip or a taste of someone else’s drink – more than 2 or 3 times in your life?” Answer choices were, 0 = *no* and 1 = *yes*. “Think about the first time you had a drink of beer, wine, or liquor when you were not with your parents or other adults in your family. How old were you then?” Answer choices ranged from 1 year to 19 years and older. “During the past 12 months, on how many days did you drink alcohol?” answer options included 1 = *everyday or almost every day* to 7 = *never*; “Over the past 12 months, on how many days have you gotten drunk or very, very high on alcohol?” Participants choose from a 7-item scale which consisted of: “every day or almost every day;” “3 to 5 days a week;” “1 or 2 days a week;” “2 or 3 days a month,” “once a month or less;” and “1 or 2 days in the past 12 months.”

The next three questions used in this study were, “Have you ever drunk alcohol when you were alone?”; “Have you ever driven while drunk?”; and “Have you ever been drunk at school?” Each of those three questions was scored as 0 = *no* and 1 = *yes*. The final question for this topic area included in this study was, “Over the past 12 months, how many times were you hung over?” Possible answers for this question were on a 5-item Likert scale listed as: *never*, *once*, *twice*; *3 or 4 times*; or *5 or more times*.

## **Steroids**

To examine adolescent steroid use, this study used the following Add Health interview questions, “Have you taken steroids since 6/95 without MD permission?”

Answer choices are 0 = *no* and 1 = *yes*. “Have you used legal performance-enhancing substance past year? Answer choices were 0 = *no* and 1 = *yes*. “Have you used anabolic steroids, illegally in the past year?” Answer choices are 0 = *no* and 1 = *yes*.

## CHAPTER IV

### RESULTS

This chapter focuses on the results of statistical analyses employed to examine the research questions proposed for this study. As is commonly used and accepted in behavioral sciences as a sufficient  $p$  value (alpha) in statistical analyses, a two-tailed  $p$  value (alpha) of .05 was used as the threshold for determining statistical significance and the degree of certainty at which the null hypotheses could be rejected. Because only two groups were being compared on various outcomes, differences in group scores were analyzed using independent sample  $t$  tests. All analyses were conducted using SPSS version 17 and outputs included sample sizes ( $n$ ), mean scores ( $M$ ), standard deviations ( $SD$ ), degrees of freedom ( $df$ ),  $t$ -test results ( $t$ ), and statistical significance ( $p$ ). The statistical results for each analysis are presented by research question in the order they were listed previously.

#### Research Question 1

*To What Degree Do Adolescents with an Identified Coach Mentor Vary in Problem Outcome Areas from Adolescents Without a Mentor?*

The tables that follow show differences between rates of adolescent problem behaviors with and without coach mentors. The areas of focus for this question included alcohol, tobacco, marijuana, steroids, and sexual relations.

#### Alcohol

Table 2 presents mean score differences for variables in data collection Wave I

and Wave II relating to adolescent alcohol use. Wave I participants ranged from 13-20 answer choices ranged from 0 = *never* and 4 = *five or more* ( $Mm = .62, SDm = 1.16; Mnm = .61, SDnm = 1.02$ )  $t(99) = .04, p > .05$ , and “Have you ever driven while drunk?” where 0 = *no* and 1 = *yes* ( $Mm = .15, SDm = .36; Mnm = .13, SDnm = .34$ )  $t(115) = .28, p > .05$ . The mean scores for “Over the past 12 months, on how many days did you drink alcohol?” were equal ( $Mmentor = 4.89, SDmentor = 1.46; Mnm = 4.89, SDnm = 1.66$ )  $t(116) = .02, p > .05$ . It is interesting to note that although rates of days drinking were equal, adolescents with a mentor reported being drunk less often.

Significant results were found in Wave II when adolescents were asked “Since Method of Last Interview (MOLI), have you had a drink of alcohol more than 2-3 times?” with lower scores meaning no participation and higher scores meaning participation. Adolescents without a mentor ( $M = .43, SD = .50$ ) scored lower than adolescents with a coach mentor ( $M = .59, SD = .50$ )  $t(164) = 1.99, p < .05$ . For the question “Ever drunk alcohol while you were alone?” where 0 = *no* and 1 = *yes* significant results were also found favoring adolescents with a coach mentor ( $M = .41, SD = .41$ ) as opposed to adolescents without a mentor ( $M = .47, SD = .51$ )  $t(51) = 2.43, p < .05$ . The number of questions failing to reach significance were split between the groups with the mentor group being favored in “Over the past 12 months, on how many days have you gotten drunk or ‘very, very high’ on alcohol?” ( $Mmentor = 5.25, SDmentor = 1.52; Mnm = 5.1, SDnm = 1.94$ )  $t(80) = .39, p > .05$ , and “Over the past 12 months were you hung over?” where answer choices could range in between 0 = *never* and 4 = *five or more*. ( $Mmentor = 1.04, SDmentor = 1.40; Mnm = 1.13, SDnm = 1.41$ )

Table 2

*Mean Scores Comparison of Adolescent Alcohol Use for Youth Without a Mentor and Youth With a Coach Mentor*

Variable	No mentor		Coach mentor		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Drink alcohol more than 2-3 times	0.51	0.50	0.56	0.50	220.00	-0.67	0.50
Age first drink alcohol	12.55	3.93	13.90	1.50	47.00	-1.99	0.05
Past year-how often drink alcohol	4.89	1.66	4.89	1.46	116.00	0.00	0.98
Past Year-times gotten drunk	5.51	1.52	5.62	1.48	98.00	-0.36	0.72
Hung over	0.61	1.02	0.62	1.16	99.00	-0.04	0.97
Drive while drunk	0.13	0.34	0.15	0.36	115.00	-0.28	0.78
Drunk at school	0.11	0.32	0.10	0.30	115.00	0.22	0.83
Drink when alone	0.42	0.50	0.19	0.40	103.00	2.67	0.00
Wave II							
Drink alcohol more than 2-3 times	0.43	0.50	0.59	0.50	164.00	-1.99	0.05
Past year-gotten drunk	5.10	1.94	5.25	1.52	80.00	-0.39	0.70
Driven while high on drugs	0.28	0.46	0.32	0.48	41.00	-0.29	0.77
Hung over	1.13	1.41	1.04	1.40	80.00	0.30	0.77
Drive while drunk	0.10	0.31	0.21	0.41	72.00	-1.33	0.19
Ever drunk alone	0.47	0.51	0.21	0.41	51.00	2.34	0.02

<sup>a</sup>All 2-tail tests.

$t(80) = .30, p > .05$  and the no mentor group being favored in “Over the past 12 months have you driven while high on drugs?” where 0 = *no* and 1 = *yes* ( $Mm = .32, SDm = .48; Mnm = .28, SDnm = .46$ )  $t(41) = .29, p > .05$ , and “Have you ever driven while drunk?” where 0 = *no* and 1 = *yes* ( $Mm = .21, SDm = .41; Mnm = .10, SDnm = .31$ )  $t(72) = 1.33, p > .19$ .

### **Tobacco**

Table 3 indicates that among items addressing adolescent tobacco use, no statistically significant mean score differences were observed between the two groups. Although no statistical significance was found, there were differences between cigarette smoking and tobacco chewing. In Wave I, adolescents with a coach mentor scored more favorably in regards to smoking in all three of the areas including; “Have you ever tried cigarette smoking, even just 1 or 2 puffs?” where 0 = *no* and 1 = *yes* ( $Mm = .51, SDm = .50; Mnm = .55, SDnm = .50$ )  $t(220) = .54, p > .05$ , “Have you ever smoked cigarettes regularly?” where 0 = *no* and 1 = *yes* ( $Mm = .40, SDm = .50; Mnm = .55, SDnm = .50$ )  $t(94) = 1.46, p > .05$ , and “How old were you when you first started smoking cigarettes regularly?” ( $Mm = 14.5, SDm = 2.9; Mnm = 13.5, SDnm = 2.52$ )  $t(113) = .27, p > .05$ .

Chewing tobacco was different. Although not statistically significant, the non-mentor group scored more favorably on both questions; “How old were you when you used chewing tobacco or snuff for the first time?” ( $Mm = 10.38, SDm = 2.40; Mnm = 12.25, SDnm = 3.30$ )  $t(23) = 1.00, p > .05$ , and “During the past 30 days, on how many days did you use chewing tobacco?” ( $Mm = 1.19, SDm = 4.32; Mnm = .69, SDnm = 3.46$ )  $t(214) = .93, p > .05$ .

Table 3

*Mean Scores Comparison of Adolescent Cigarette, Chewing-Tobacco, and Marijuana Use for Youth Without a Mentor and Youth With a Coach Mentor*

Variable	No mentors		Coach mentors		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Wave I							
Ever smoked a cigarette	0.55	0.50	0.51	0.50	220.00	0.54	0.59
Smoked cigarettes regularly	0.55	0.50	0.40	0.50	94.00	1.46	0.15
30 days-chewed tobacco	0.69	3.46	1.19	4.32	214.00	0.93	-0.36
Age began smoking regularly	13.50	2.52	14.50	2.90	44.00	1.21	-0.23
Age first chewed	12.25	3.30	10.38	2.40	23.00	1.00	0.33
Times smoked pot	52.68	104.48	114.37	185.14	26.00	1.32	-0.20
Past 30 days times smoked pot	9.34	16.23	8.50	11.70	47.00	0.20	0.84
Wave II							
Smoked a cigarette	0.51	0.50	0.38	0.49	165.00	1.78	0.08
Smoked cigarettes regularly	0.39	0.46	0.54	0.51	71.00	1.26	-0.21
Year first smoked regularly	95.13	0.35	95.12	0.42	32.00	0.57	0.57
30 days chewed tobacco	1.03	4.89	1.80	6.31	166.00	0.87	-0.39
Past 30 days-times smoked pot	3.67	13.13	7.56	7.70	38.00	1.18	-0.25

<sup>a</sup>All 2-tail test.

It is interesting to note in Wave II that for smoking the question was changed slightly, “Since {MOLI}, have you smoked cigarettes regularly, that is, at least one cigarette every day for 30 days?” with lower scores indicating no participation and higher scores indicating participation ( $Mm = .54, SDm = .51; Mnm = .39, SDnm = .46$ )  $t(71) = 1.26, p > .05$ . In Wave II the question was asked “Since {MOLI}, in what year did you first smoke cigarettes regularly, that is, smoke at least one cigarette every day for 30 days?” with the answer choices being the entire year 1995 or 1996 ( $Mm = 95.12, SDm = .35; Mnm = 95.13, SDnm = .42$ )  $t(32) = .57, p > .05$ . The respondents answers favored the nonmentor group, albeit slightly. The mentor group was favored in the responses to the question, “Since {MOLI}, have you tried cigarette smoking, even just one or two puffs?” ( $Mm = .38, SDm = .49; Mnm = .51, SDnm = .50$ )  $t(71) = 1.26, p > .05$ . Similar to Wave I responses, the nonmentor group was favored in response to the chewing tobacco question, “During the past 30 days, on how many days have you used chewing tobacco?” ( $Mm = 1.80, SDm = 6.31; Mnm = 1.03, SDnm = 4.89$ )  $t(166) = .87, p > .05$ . Fewer adolescents with a mentor smoke, but the ones that do smoke were more regular and started smoking at an earlier age.

### **Marijuana**

Also seen in Table 3 are the group comparisons in areas of marijuana use. All three questions about marijuana use failed to reach statistical significance. The nonmentor group was favored in one of the two queries in Wave I: “During your life, how many times have you used marijuana?” ( $Mm = 114.37, SDm = 185.14; Mnm = 52.68, SDnm = 104.48$ )  $t(26) = 1.32, p > .05$ . The mentor group was favored in the

question, “During the past 30 days, how many times did you use marijuana?” ( $Mm = 8.50$ ,  $SDm = 11.70$ ;  $Mnm = 9.34$ ,  $SDnm = 16.23$ )  $t(47) = .20$ ,  $p > .05$ . The pattern to the marijuana question in Wave II “During the past 30 days, how many times did you use marijuana?” was reversed ( $Mm = 7.56$ ,  $SDm = 7.70$ ;  $Mnm = 3.67$ ,  $SDnm = 13.13$ )  $t(38) = 1.18$ ,  $p > .05$ , which is more consistent with the onset and prevalence questions from Wave I.

### **Steroids**

Table 4 presents statistically significant mean score differences for one of the three variables used relating to steroid use. Adolescents without a coach mentor were less likely to use steroids. Responses to “In the past year, have you used a legal performance enhancing substance?” (lower scores indicating low usage and higher scores indicating higher usage) indicated that adolescents in this study with a coach mentor ( $M = .23$ ,  $SD = .42$ ) were more likely to use legal performance enhancers than those without coach mentors ( $M = .12$ ,  $SD = .32$ )  $t(209) = 2.25$ ,  $p > .05$ . Responses for the questions “Have you taken steroids since 6/95 without MD permission?” where 0 = *no* and 1 = *yes* ( $Mm = .02$ ,  $SDm = .13$ ;  $Mnm = .01$ ,  $SDnm = .10$ )  $t(222) = .26$ ,  $p > .05$ , and “In the past year, have you used anabolic steroids?” where 0 = *no* and 1 = *yes* ( $Mm = .02$ ,  $SDm = .13$ ;  $Mnm = .02$ ,  $SDnm = .13$ )  $t(222) = .38$ ,  $p > .05$ , were not statistically significant between the study and the control group. It is interesting to note the survey revealed relatively low responded usage for all three performance enhancing substance questions.

Table 4

*Mean Scores Comparison of Adolescent Steroid Use of Youth Without a Mentor and Youth With a Coach Mentor*

Wave III Variable	No mentor		Coach mentor		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Take steroids since 6/95 without MD permission	0.01	0.10	0.02	0.13	222	-0.56	0.57
Use legal performance- enhancing substance past year	0.12	0.32	0.23	0.42	209	-2.25	0.03
Use anabolic steroids, illegal past year	0.02	0.13	0.02	0.13	222	0.00	0.99

<sup>a</sup>All 2-tail test.

## Sex

Tables 5-6 present statistically significant mean score differences on one of the seven variables used relating to sexual attitudes and behaviors. In 19 questions over the first two waves of data collection, the only question that demonstrated statistical significant difference was the Wave II question “If you have sex would feel guilty?” On a scale of 1 to 5 with 1 = *strongly agree* and 5 = *strongly disagree*. Adolescents with a coach mentor responded that they would feel more guilty ( $M = 2.88$ ,  $SD = 1.19$ ) than adolescents without a mentor ( $M = 3.34$ ,  $SD = 0.99$ )  $t(166) = 2.71$ ,  $p < .01$ .

## Research Question 2

*How Much Variation is there in Named Risk-taking Outcomes Between Younger Adolescents (15 years and younger,  $N = 92$ ) and Older Adolescents (16 years and older,*

Table 5

*Wave I Mean Scores Comparison of Adolescent Sexual Attitudes and Behaviors of Youth Without a Mentor and Youth With a Coach Mentor*

Variable	<u>No mentors</u>		<u>Coach mentors</u>		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
If have sex will gain more respect	3.22	1.02	3.31	1.00	150	-0.53	0.60
If have sex will lose partner respect	3.64	0.92	3.43	0.98	149	1.34	0.18
If have sex would feel guilty	3.40	0.97	3.15	1.16	149	1.44	0.15
If have sex would upset mother	2.58	1.21	2.27	1.12	138	1.58	0.12
If have sex would have a lot of physical pleasure	2.29	0.99	2.28	1.06	150	0.10	0.92
If have sex would be relaxing	2.54	0.89	2.58	0.96	148	-0.23	0.82
If have sex would be more attractive	3.28	0.94	3.38	0.92	148	-0.71	0.48
If have sex would feel less lonely	3.17	0.95	3.29	0.98	149	-0.79	0.43
Ever have sex	0.40	0.49	0.41	0.49	221	-0.06	0.96

<sup>a</sup>All 2-tail tests.

*N* = 134)?

The next three tables show differences between rates of self-reported adolescent problem behavior stratified by age at interview rather than mentor status. Younger adolescents were classified as ages 15 years and younger, and older adolescents as ages

Table 6

*Wave II Mean Scores Comparison of Adolescent Sexual Attitudes and Behaviors of Youth**Without a Mentor and Youth With a Coach Mentor*

Variable	<u>No mentors</u>		<u>Coach mentors</u>		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
If have sex will gain more respect	3.26	0.93	3.35	0.99	166	-0.57	0.57
If have sex will lose partner respect	3.54	1.01	3.42	1.51	166	0.68	0.50
If have sex would feel guilty	3.34	0.99	2.88	1.19	166	2.71	0.01
If have sex would upset mother	2.25	1.86	2.13	1.09	152	0.69	0.49
If have sex would have a lot of physical pleasure	2.41	1.03	2.30	0.87	165	0.74	0.46
If have sex would be more attractive	3.25	0.95	3.41	0.90	165	-1.11	0.27
If have sex would feel less lonely	3.14	1.00	3.26	0.96	166	-0.77	0.45
Taken pledge to remain virgin	0.15	0.36	0.13	0.34	165	0.30	0.76
Ever have sex	0.44	0.50	0.48	0.50	168	-0.55	0.59

<sup>a</sup>All 2-tail tests.

16 and older. This split is in accord with many studies examining early and late adolescence. Only Wave I data were addressed except for the steroid section which was only addressed in Wave III.

### **Alcohol**

Table 7 displays *t* test results for male adolescents alcohol use. Statistically significant results for less alcohol use favored younger males in all but one of the independent variables tested. The items favoring younger adolescents included: “Have you drank alcohol more than 2-3 times in lifetime?” where 0 = *no* and 1 = *yes* ( $M_{younger} = .41, SD_{younger} = .50; M_{older} = .62, SD_{older} = .49$ )  $t(220) = -3.14, p < .001$ ; “In the past year how often have you drank alcohol?” where 1 = *everyday* and 7 = *never* ( $M_y = 5.69, SD_y = 1.41; M_o = 4.54, SD_o = 1.48$ )  $t(116) = 3.96, p < .001$ ; “In the past year, how many times have you gotten drunk?” where 1 = *everyday* and 7 = *never* ( $M_y = 6.25, SD_y = 1.26; M_o = 5.36, SD_o = 1.50$ )  $t(98) = 2.64, p < .01$ ; “In the past year, how many times were you hung over?” where answer choices could range in between 0 = *never* and 4 = *five or more* ( $M_y = .12, SD_y = .33; M_o = .78, SD_o = 1.21$ )  $t(97) = -4.28, p < .001$ ; “Have you ever driven while drunk?” where 0 = *no* and 1 = *yes* ( $M_y = .00, SD_y = .00; M_o = .20, SD_o = .40$ )  $t(81) = -4.43, p < .001$ ; and “Have you been drunk at school?” where 0 = *no* and 1 = *yes* ( $M_y = .03, SD_y = .17; M_o = .13, SD_o = .34$ )  $t(113) = -2.23, p < .05$ . The only result failing to reach significance is “Have you drank when alone” where 0 = *no* and 1 = *yes* ( $M_y = .23, SD_y = .43; M_o = .33, SD_o = .47$ )  $t(71) = -1.13, p > .05$ . “Age first drank alcohol?” was the only variable in favor of older adolescents ( $M_y = 11.54, SD_y = 2.79$ ;

Table 7

*Mean Scores Comparison of Adolescent Alcohol Consumption Behaviors of Younger and Older Adolescents*

Variable	Younger		Older		df	t	p <sup>a</sup>
	M	SD	M	SD			
Drink alcohol more than 2-3 times	0.41	0.50	0.62	0.49	220	-3.14	0.00
Age first drink alcohol	11.54	2.79	13.60	2.91	78	-2.35	0.02
Past year-how often drink alcohol	5.69	1.41	4.54	1.48	116	3.96	0.00
Past year-times gotten drunk	6.25	1.26	5.36	1.50	98	2.64	0.01
Hung over	0.12	0.33	0.78	1.21	97	-4.28	0.00
Drive while drunk	0.00	0.00	0.20	0.40	81	-4.43	0.00
Drunk at school	0.03	0.17	0.13	0.34	113	-2.23	0.03
Drink when alone	0.23	0.43	0.33	0.47	71	-1.13	0.26

<sup>a</sup>All 2-tail tests.

$M_o = 13.60, SDo = 2.91) t(78) = -2.35, p < .001.$

### **Tobacco**

The next variables of interest pertained to tobacco use among adolescents. Table 8 shows that three of the five variables analyzed differed statistically between the two

groups. It is noted that the two results that the older adolescents were favored were both related to the ages that they first participated in the problem behaviors with the first two being significant. The questions included; “At what age did you begin smoking regularly?” ( $M_y = 13.13$ ,  $SD_y = .99$ ;  $M_o = 14.05$ ,  $SD_o = 2.90$ )  $t(44) = -1.59$ ,  $p > .05$ ; and “At what age did you first begin chewing tobacco?” ( $M_y = 10.50$ ,  $SD_y = 4.50$ ;  $M_o = 11.65$ ,  $SD_o = 4.81$ )  $t(23) = -.57$ ,  $p > .05$ . Younger adolescents were less likely to have “Ever smoked a cigarette” ( $M_y = .41$ ,  $SD_y = .50$ ;  $M_o = .61$ ,  $SD_o = .49$ )  $t(220) = 3.02$ ,  $p < .001$ ; “Smoked cigarettes regularly” ( $M_y = .31$ ,  $SD_y = .47$ ;  $M_o = .54$ ,  $SD_o = .50$ )  $t(47) = -2.14$ ,  $p < .001$ ; and “Chew tobacco in the last month” ( $M_y = .41$ ,  $SD_y = 1.68$ ;  $M_o = 1.31$ ,  $SD_o = 4.85$ )  $t(171) = -1.95$ ,  $p < .05$ .

### **Marijuana**

Table 8 also contains the group differences in marijuana use. One of the two questions showed statistically significant difference. Older adolescents ( $M = 87.88$ ,  $SD = 153.47$ ) scored higher than younger adolescents ( $M = 19.00$ ,  $SD = 36.33$ )  $t(41) = -2.47$ ,  $p < .05$  when asked “During your life how many times have you used marijuana?” with answers ranging from 1 - 950 times. Interestingly enough, although not reaching significance at the .05 alpha level, the results was reversed when the respondents were asked “During the past 30 days how many times have you smoked pot?” answer ranged from 0 - 900, with the younger adolescents scoring higher ( $M = 15.11$ ,  $SD = 23.37$ ) than the older adolescents ( $M = 7.63$ ,  $SD = 11.55$ ),  $t(9) = .94$ ,  $p > .05$ .

### **Steroids**

Table 9 contains information dealing with differences in the use of steroids and

Table 8

*Mean Scores Comparison of Adolescent Tobacco Use of Younger and Older**Adolescents*

Variable	Younger		Older		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Ever smoked a cigarette	0.41	0.50	0.61	0.49	220.00	3.02	0.00
Smoked cigarettes regularly	0.31	0.47	0.54	0.50	47.00	-2.14	0.04
30 days-chewed tobacco	0.41	1.68	1.31	4.85	171.00	-1.95	0.05
Age began smoking regularly	13.13	0.99	14.05	2.90	44.00	-1.59	0.12
Age first chewed	10.50	4.50	11.65	4.81	23.00	-0.57	0.58
Times smoked pot	19.00	36.33	87.88	153.47	41.00	-2.47	0.02
Past 30 days times smoked pot	15.11	23.37	7.63	11.55	9.00	0.94	0.37

<sup>a</sup>All *t* tests two-tailed.

performance enhancers in younger and older adolescents. These results differed from the trends for younger and older adolescents in the previous questions. None of the three questions pertaining to steroid use revealed statistically significance differences at the .05 alpha levels. In fact, the two groups of adolescents were each favored in one question: younger in “Take steroids since 6/95 without MD permission?” ( $M_y = .01$ ,  $SD_y = .11$ ;

$M_o = .02, SDo = .38$   $t(222) = .26, p > .05$ , older adolescents in “Use legal performance enhancing substance past year?” ( $My = .18, SDy = .38; Mo = .17, SDo = .38$ )  $t(222) = .06, p > .05$ ; and had equal mean scores in the last question “Use anabolic steroids past year?” where ( $My = .02, SDy = .15; Mo = .02, SDo = .12$ )  $t(222) = .38, p > .05$ . The possible responses to all questions were 0 = *no* and 1 = *yes*.

### Sex

Table 10 presents statistically significant mean score differences for just one of the seven variables relating to sexual attitudes and behaviors favoring younger adolescents. Responses to “Have you ever have sexual intercourse?” where 0 = “no” and 1 = “yes” indicated that older adolescents were more sexually active ( $My = .23, SDy = .42; Mo = .52, SDo = .50$ ),  $t(212) = -4.55, p < .001$ . Although not attaining statistical significance, younger adolescents reported mean scores in favor of less sexual risk-taking behavior in all but one of the remaining variables of interest.

Table 9

*Mean Scores Comparison of Adolescent Steroid Use of Younger and Older Adolescents*

Variable	Younger		Older		df	t	p <sup>a</sup>
	M	SD	M	SD			
Take steroids since 6/95 without MD permission	.01	0.11	0.02	0.12	222	-0.26	0.80
Use legal performance enhancing substance past year	0.18	0.38	0.17	0.38	222	0.06	0.10
Use anabolic steroids past year	0.02	0.15	0.02	0.12	222	0.00	0.70

<sup>a</sup>All *t* tests two-tailed.

Table 10

*Mean Scores Comparison of Adolescent Sexual Activity or Younger and Older**Adolescents*

Variable	Younger		Older		<i>df</i>	<i>t</i>	<i>p</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
If have sex will gain more respect	3.32	1.25	3.26	1.01	150.00	0.21	0.84
If I have sex will lose partner respect	3.00	1.33	3.61	0.87	20.00	-1.92	0.07
If I have sex would feel guilty	2.84	1.34	3.33	1.02	149.00	-1.88	0.06
If I have sex would upset mother	2.21	1.23	2.45	1.19	138.00	-0.80	0.43
If have sex would have a lot of physical pleasure	2.68	1.34	2.23	0.96	21.00	1.45	0.16
If have sex would be relaxing	2.94	1.35	2.51	0.84	19.00	1.34	0.20
If have sex would be more attractive	3.39	0.98	3.33	0.92	148.00	0.27	0.79
If I have sex would feel less lonely	3.05	1.18	3.26	0.93	149.00	-0.87	0.39
Ever have sex	0.23	0.42	0.52	0.50	212.00	-4.55	0.00

<sup>a</sup>All *t* tests two-tailed.

## CHAPTER V

### DISCUSSION

This study explored differences in adolescent problem behaviors for youth who self-reported having no adult mentor in their life and those adolescents who self-reported having a coach as a mentor during their adolescent years. The purpose of this study is to explore the relationship between the presence of a coach mentor and the amount of self-reported risk-taking behaviors among adolescents ages 12-24. To understand the potential impact of coaches as mentors, data from the Longitudinal Study of Adolescent Health (Add Health) were analyzed to address the following research questions:

1. To what degree do adolescents with an identified coach mentor vary in problem outcome areas from adolescents without a mentor?
  - a. Drug use (specifically alcohol, tobacco (cigarettes), marijuana, and steroids)?
  - b. Sexual behavior?
2. How much variation is there in named risk-taking outcomes between younger adolescents (15 years and younger) and older adolescents (16 years and older)?

Results presented in the previous chapter do not support the notion that adolescents with a coach mentor differ from those with no mentor. However, older and younger adolescents did differ significantly on the observed behaviors. A detailed discussion of the results for each research question is included in this chapter.

## **Adolescents with No Mentors Versus Adolescents with a Coach Mentor**

While examining the findings of this study, it became apparent that coaches did not have as big of an impact as expected. Adolescents who marked a coach as their most influential mentor scored similarly to those adolescents with no marked mentor. Out of 43 variables, only 5 were statistically significant with 4 out of the 5 being in favor of the mentees. The other 38 risk variables examined in this study had similar mean scores with the mentee and non-mentor groups. Several methodological factors may have contributed to these findings including reliance on memory, forced primary mentor selection, and confounding factors.

In order to understand the results, it is important to understand the data collection methods and the participants. As previously noted, mentoring was only addressed in Wave III of the Add Health study. As 20- to 25-year-old participants were asked to examine their past and remember if there was a non-parent adult that made an important positive difference in their life. If the adolescent remembered a “mentor,” they were only able to pick the most influential. Out of the 4,882 participants, over 76% recalled having a mentor. Many types of mentors (grandparents, teachers, church leaders) spend large quantities of time with adolescents so it is understandable that only 113 (2.23%) chose a coach as most influential. It can be assumed that coaches may have been a likely mentor for many other adolescents, but may not have been on their mind at the time of the survey or might not have been their first choice. Those adolescents who spent enough time with a coach to choose them as their most influential mentor were most likely heavily involved in athletics. In most cases, taking part in athletics means being part of a team. The team

dynamics may provide access to close knit community, often consisting of the more popular kids. With that background, the trends and implications for each area of problem behavior investigated in this study are expanded below.

Adolescents in this study who identified a mentor coach were more likely to try alcohol, but they tried it at a significantly later age than their non-mentored peers. They drank about as often over the past year, but got drunk less and, consequently, were hung over less. One possible explanation for this drinking pattern is the covariant social nature of many athletic groups. Athletes might drink socially but, in an effort to avoid the physical consequences of alcohol in their systems, they might not drink as much as non-athletic peers. The fact that the athletes were significantly less likely to drink alone also fits well with this idea of being part of a group or team. Interestingly enough, the mentee group was slightly more likely to drink and drive, but slightly less likely to drink at school. This could be because there are generally unique consequences of getting in trouble at school for athletes, the impact of which might jeopardize their participation in athletics. Therefore, getting in trouble at home could be seen as less consequential than missing a sporting season.

It is interesting to note the response differences reported from Wave I to Wave II. Keeping the trend of Wave I, when the adolescents were asked if they had drunk alcohol at least once since the Wave I questionnaire, the mentor group's rate of consumption was significantly higher. Even though the mentor group had drunk more, they got drunk less frequently and were hung over less often. Unfortunately, data were not solicited in Wave II for drinking at school, but athletes drank and drove more often. The no mentor group, again, reported significantly higher rates of drinking alone.

In regards to tobacco use, the study group was less likely to have ever smoked and less likely to smoke regularly. If the mentor group did start smoking, they started smoking regularly later in life. In regards to chewing tobacco, a different pattern emerged. Consistent with the existing literature, of the adolescents in this study that started chewing tobacco, the mentor group started younger and chewed more in the last month before the interview. Chewing tobacco tends to be more popular among athletes. Tomar and Givino (1998) found adolescents who participate in organized athletics were more likely than non-participants to use smokeless tobacco. Many athletes will abstain from smoking because they believe it will hurt their athletic performance (Tomar & Givino, 1998). Chewing tobacco does not have the same stigma. In fact, chewing tobacco has been modeled by many premier athletes, especially in baseball. The general trend of athletes reporting higher usage of chewing tobacco and lower incidents of smoking remained in Wave II. The only differences were that the athletes, later in life, were significantly less likely to try cigarette smoking, but if they did participate in smoking they were slightly more likely to smoke regularly.

Throughout each wave of data collection, marijuana use was reported far more in the mentor group. Interestingly enough, however, athletes reported smoking pot less in the last month before the survey. The group reporting higher incidents of smoking marijuana was reversed in Wave II where the athletes smoked pot more in the previous month. This finding correlates better with the results for lifetime marijuana use.

Consistent with previous research, the rate of performance enhancers favored the non-mentor group. Steroid use is presumed to be the result of a more or less rational decision motivated by a desire to succeed in athletics (Miller et al., 2005). The National

Institute on Drug Abuse (2006) noted that adolescent steroid intake was significantly higher with those participating in high school athletic programs. The athletes in this study reported higher incidences of taking illegal steroids since 6/95. Keeping with the trend, athletes also used significantly more legal performance enhancers (e.g., Creatine, nitric oxide, testosterone boosters). Interestingly, the mentor and non-mentor groups used illegal anabolic steroids at the same rate in the year preceding the study. Yesalis and colleagues (1997) noted that steroid use has spread beyond the competitive sports community to include non-athletes, especially weight lifters and bodybuilders for the sole purpose of weight training (Miller et al., 2002).

As mentioned previously, adolescence is a key time in the development of sexuality and sexual behavior patterns because this is when most individuals first experience sexual intercourse (Meschke et al., 2000). The adolescents with coach mentors generally exhibited healthier behaviors and attitudes in regards to sexual intercourse during this important stage of development. The adolescent mentees reported having sex later in life but, interestingly, slightly more of them reported engaging in sex. The mentees were less likely to think they would gain more respect from friends if they had sex, and thought that their partner would lose respect if they did have sex. Mentees reported they felt more guilt if they had sex and reported thinking their mothers would be more upset. It is possible that part the reason for feeling guilt is disappointing their parents. The adolescent mentees thought engaging in sex would be more pleasurable; however, they were less likely to think it would be relaxing. With respect to their peers' opinions, the mentees were less likely to think participation in sex would make them more attractive and less lonely.

In Wave II, adolescents with coach mentors were more likely to indicate that they have had sex; however, more of them had also taken pledges to remain virgins. They were still less likely to think they would gain more respect from friends if they had sex, and still thought that their partner would lose respect if they did have sex. The only difference was that they were significantly more likely to feel guilty at the later stage. The trend remained that they believed more of their mothers would be upset and they were still more likely to think sex would be pleasurable. They continued to be less likely to think sex would make them more attractive and still less likely to think that if they had sex it would make them feel less lonely. More research into the reasons for these findings seems warranted.

The responses from the first research question show that there were few differences in behaviors and attitudes between adolescents with a coach mentor and those without a mentor. The mentees reported drinking more, but at a later age and getting drunk less. The athletes' behaviors fit well with being part of a popular group and understanding group dynamics. The athletes' use of tobacco also fit in line with previous research. While athletes used tobacco, they participated less in smoking and used chewing tobacco which is seen as less likely to hurt their athletic competence. The mentees reported higher usage of marijuana and steroids, but their sexual attitudes and actions were generally healthier. Thus, we see that athletes participated in about the same amount of risk activity, just in different areas.

### **Older Adolescents Versus Younger Adolescents**

As was expected, older adolescents report higher occurrences of participation in

risk behaviors than younger adolescents did. However, when looking at the data, the disparity is pronounced. Especially noteworthy are the areas of alcohol, tobacco, and marijuana use, where the differences of twelve out of the fifteen variables were statistically significant. Implications of some of the most important findings are discussed below.

Younger adolescents reported statistically significant less problem behaviors in every question pertaining to alcohol use except for two: “Drink when alone?” and “Age first drink alcohol?” Younger adolescents still reported drinking less alone, but the results did not differ significantly. This could be because fewer of their peers drank so they had to do it alone, or that the younger the youth, the harder alcohol is to obtain, and therefore, some level of covert activity was required to secure the alcohol. The only difference where younger adolescents were more risky than the older adolescents was the age that they first drank alcohol. This seems intuitive because those young adolescents that have drunk had to do it earlier because they were younger when they participated in the study.

Concerning tobacco use, younger adolescents began chewing and smoking regularly at earlier ages, but were less likely to have ever smoked, smoked regularly, or chewed tobacco in the previous month. The findings for marijuana were interesting. Younger adolescents reported smoking pot significantly less in life, but in the previous month smoked marijuana more often. Younger adolescents have not had the time to generate higher numbers in the lifetime smoking variable, but seem to be smoking more and starting to build those numbers.

Older adolescents were more likely to have taken steroids illegally since 6/95, but just as likely to use anabolic steroids in the past year. This seems intuitive because of the

advanced age of older adolescents more time has passed 6/95 therefore, creating more opportunities for use. Older adolescents engage in higher rates in the vast majority of reported behaviors. It is interesting that steroid use was equally prevalent between these two groups. Younger adolescents were more likely to use legal performance enhancers. Because illegal drugs are harder to come by, some younger adolescents may be turning to legal performance enhancers to gain an athletic edge.

Coinciding with the other variables, the younger adolescents who had participated in sexual intercourse did so earlier, but were found to be significantly less likely to ever have had sex. Younger adolescents reported better scores in all sexual attitude questions except for reporting that “If have sex would they would feel less lonely?”

### **Implications**

In these critical transitory years from childhood to adulthood, adolescents are receiving their first taste of independence. As adolescents are making their first major life decisions they are influenced by multiple layers of their environment including, parents, siblings, peers, school, the media, and their culture. In this time of “storm and stress” (Hall, 1904) previous studies have shown mentoring to facilitate positive gains in the health and well-being of developing youth (DuBois & Silverthorn, 2005). Although this study did not find many significant differences in regards to having a mentor, age proved to be a big factor. By taking a step back to look at the findings of this study, the reader may realize that age had a far greater impact on problem behaviors than did the presence of a coach mentor. Adolescents with a coach mentor did slightly better than the comparison group with few significant results. When looking at age, the two groups

differed markedly with many statistically significant findings. As adolescents aged, they participated in significantly more risk behaviors. It seems that having an identified coach mentor may not make as much of a difference as age, just getting older and making the mistakes that arise with coming of age. How do we intervene when adolescents risk behaviors are correlated with growing older? As adolescents get older, the need for quality mentors might increase. These factors could be further understood in future studies.

### **Theory**

Coaches as mentors of adolescents seem to be a prime example of what Vygotsky defined as a “More Knowledgeable Other (MKO).” A coach is usually an older, more knowledgeable person that imparts knowledge about sports and many other life lessons. These MKO’s are people that have a better understanding or a higher ability level than the learner, particularly in regards to a specific task, concept, or process (Mariage et al., 2000). It is a coach’s duty to impart their knowledge of the sport to help the athlete improve. In Vygotskian perspective, “the ideal role of the teacher is that of providing scaffolding (collaborative dialogue) to raise the student's competence on tasks within their zones of proximal development” (Hamilton & Ghatala, 1994, p. 277). One way to apply Vygotsky’s process of scaffolding effectively, coaches may apply the steps outlined by Feden and Vogel (2006). Coaches must build interest and engage the learner, inspiring is an important part of coaching. Once the learner is actively participating, coaches may simplify the task by breaking it into smaller subtasks. Common examples of this include practicing passing a soccer ball, center to quarterback exchange in

football, or putting in golf. As coaches instruct it is important to help their athletes not to become frustrated. The final task involves the coach modeling possible ways of completing tasks, which the athlete can then imitate and eventually internalize (Feden & Vogel, 2006). As coaches follow these steps, they may help their adolescents surpass their actual development and reach their true potential. When a coach controls those parts of a task that are too difficult for the player, the athlete is allowed to focus on the elements within his or her ability level. As the athlete learns, the coaches' control lessens, allowing the player to have control over more of the task. As coaches provide a scaffold for their athletes, the adolescents' competence may raise within their zone of proximal development. As coaches mentor children, they have the potential to influence many aspects of an adolescent's life beyond the playing field.

### **Limitations**

There are many benefits to using the Add Health data set. This strong and reputable research database has been used in numerous studies looking at various aspects of adolescent development. Using an existing data set is a logical starting point in the research process for questions that have not been adequately explored previously. While there are many benefits to such an expansive data set, many aspects of this study are lacking. Unfortunately, it was not until Wave III of the research that the subjects were asked about mentoring. Participants were asked to reflect back approximately 5 to 7 years and declare with some degree of certainty information related to mentoring influences that ideally could have been asked in Waves I and II. Problems with memory could have influenced the results.

Unfortunately, respondents could only list one mentor in their lives. It is possible that additional participants were heavily influenced by a coach and would have listed coaches if they could have listed a second choice. As a result of this lack of options, there were a relative small number of those who reported being mentored by a coach. This created a small sample size, which greatly reduced one of the reasons to use this data set. Although, as mentioned previously, the availability of a reputable data set is a great place to start looking at the intended relationship, this constricted the findings to the general questions without allowing the researcher to inquire about specific ideas. This constriction does not allow an in-depth study on all of the desired variables and does not lend itself to speculating behind the results.

### **Future Work**

This study was an important first step in finding the relationship between coaching and adolescent problem behaviors. Studies that are more empirical need to be conducted to be able to get a better picture of the impact of this particular mentor-mentee relationship. It was important to take a look at the existing data to see what could be explained. Results seemed to suggest that in some areas coaches might have a positive effect, albeit slight. Further work needs to be done to clarify the degree of the impact and provide answers to possible reasons for differences. A logical next step would be to look at athletes that did not identify a coach as an important mentor versus athletes that did identify a close coach mentor to see what is normal for athletes versus what a coach actually does. Other questions of interest might include the following: Is the influence of coaches as mentors more important and significant than just any other adult? What is the

problem behavior relationship with coaches and girls? How much time does it take to develop a coaching relationship? Does length of time being their coach affect the impact? Are certain years of adolescence more important to have an influential coach? How long do coach mentors stay in touch with adolescents? Are relationships stronger or weaker depending on sport coached? What level of impact does coach efficacy have? Do coaches need to have contact with adolescents outside of the sport to develop a strong relationship, such as also being a teacher, religious leader, parent of a friend, or friend of the family?

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