ABSTRACT

Title of Document: CONNECTING THE FORGOTTEN HALF: THE SCHOOL-TO-WORK TRANSITION OF NON-COLLEGE BOUND YOUTH

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When we think of high school students making the transition to adulthood, most of us picture students pursuing a college or university education. However, for many individuals, this image is not the case. For some youth, the transition to adulthood is marked by entrance into the workforce. While previous research has examined the school-to-work transition of non-college-bound youth, most only have considered a limited set of variables and only examined job attainment. By considering job quality and employment stability in addition to job attainment, the present study examined the school-to-work transition of non-college bound youth using a nationally representative sample of youth followed longitudinally. Using data from the National Longitudinal Survey of Youth, 1997 Cohort, we examined a comprehensive set of predictors within an ecological framework. This study sought to determine: "What were the predictors of job attainment, stability of employment, and job quality for youth who are making the school-to-work transition?" Logistic regression and structural equation modeling were

used to examine the hypotheses. With regard to job attainment, depression, substance use, adolescent educational attainment, and employment in adolescence were associated with obtaining employment. With regard to job quality and stability of employment, depression, substance use, adolescent educational attainment, employment in adolescence, parental educational attainment, and income were associated with these job characteristics. Parent-adolescent relationship and physical risk were not associated with job characteristics.

CONNECTING THE FORGOTTEN HALF: THE SCHOOL-TO-WORK TRANSITION OF NON-COLLEGE BOUND YOUTH

By

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Dedication

For the “forgotten half” of youth who are making the transition to the workforce; you may be forgotten but do not let your experience be ignored.

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I would like to express my gratitude to all those who gave me the possibility to complete my dissertation.

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Chapter I: Introduction to the Problem

When we think of high school students making the transition to adulthood, most of us picture students pursuing a college or university education. However, for many individuals, this image is not the case. For some youth, the transition to adulthood is marked by entrance into the workforce which may or may not include the completion of high school. In October 2006, 34.2% of the class of 2006 was not enrolled in college (Bureau of Labor Statistics, 2007a). This transition to the workforce has been an area of interest since 1994 when the School-to-Work Opportunities Act passed (U.S. Department of Education, 1994). Although now defunct, this act focused research in counseling psychology on the school-to-work transition. The School-to-Work Opportunities Act was unique in that it focused on youth who were non-college bound and transitioning to the workforce. Often termed "the forgotten half," non-college bound youth represent an understudied population in the literature (American Youth Policy Forum, 1998; Blustein et al., 2002; Neumark & Rothstein, 2005). This transition is especially challenging for some youth who experience employment and career difficulties (Pinquart, Juang, & Silbereisen, 2003). Researchers have suggested that these youth tend to have difficulty finding employment, drift from one job to another, and end up in jobs lacking advancement opportunities (Smith & Rojewski, 1993). Further, these youth tend to be out of touch with traditional support systems and services and some researchers refer to them as "disconnected" (Brown & Emig, 1999; MaCurdy, Keating, & Nagavarapu, 2006). In fact, "the forgotten half" has been ignored by career development theories. Indeed, current career development theories have been criticized as focusing on the needs to the most economically and educationally advantaged youth (Worthington & Juntunen, 1997).

Researchers have suggested that current career development theories only address 15% to 25% of the population and consequently ignore non-college bound youth (Worthington & Juntunen, 1997). The present study examines the school-to-work transition of non-college bound youth using a nationally representative sample of youth followed longitudinally. The purpose of this study was to advance our understanding of the factors that contributed to a successful school-to-work transition among non-college bound youth (including both high school completers and high school dropouts).

Framework

The process of transition can be a difficult process (Brammer, 1992). While some transitions can be positive, many transitions are experienced as negative, painful, or tragic (Brammer, 1992). Transition can be defined as an event or non-event that changes relationships, routines, roles and assumptions (Schlossberg, 1995). Transition into adulthood can be a particularly difficult process (Rindfuss, 1991). For example, the school-to-work transition has been marked by employment and career challenges (Pinquart et al., 2003) such as the development of self-efficacy (Lent, Brown, & Hackett, 1994), and the attainment of skills needed for a job (Bynner, 1997). Likewise, transition can affect negatively job performance and organizational commitment (Armstrong-Stassen, 1994). However, a successful school-to-work transition can contribute to the formation of an adult identity (Bynner, 1998). Research has suggested that the type of consequences a person experiences during a transition is a result of many factors including person factors, environmental factors, and the interaction of the two (Schlossberg, 1981). For example, how well an individual fares is related to perceptions of the transition, type of transition, adequacy of coping resources, and environmental

influences (Schlossberg, 1995). Schlossberg (1995) identified four factors that affect the type of outcomes an individual in transition experiences: Situation, Support, Self, and Strategies (i.e., the 4 S's). Whether an individual has strengths and assets in each of these areas affects his or her ability to adapt to the transition. Since transition may result in problematic outcomes, it is important that the transitional experiences of various populations be studied.

To provide a framework for organizing the factors related to the school-to-work transition, the present study utilized Bronfenbrenner's (1986) ecological model which posited that individuals' development is affected by multiple spheres of influence. Bronfenbrenner's model posited a developmental model in which individual characteristics (e.g., temperament, competence, and sex), socio-contextual factors (e.g., family, peer group, school, child care, and neighborhood), and developmental processes (e.g., nurturance, limit setting, reciprocity) are considered in combination (Bronfenbrenner, 1986; Bronfenbrenner & Ceci, 1994). Consistent with the ecological model, the present study is organized around a nested set of subsystems. At the most proximal level is the microsystem which includes an individual's immediate environment (e.g., parents, significant others, health services, peers). In other words, the microsystem includes social agents that have direct interactions with an individual. The mesosystem connects the components of the microsystem (e.g., the interaction between family and peers, the connection between school experiences and work experiences). The mesosystem also includes connections between the multiple contexts in which an individual may develop. The exosystem consists of the social settings in which the client has no active role (e.g., the work setting of one's significant other, neighborhoods, city

government, or mass media). The macrosystem consists of ideologies and attitudes of the culture. Finally, the most distal influence is the chronosystem which refers to the environmental events and patterns over life. The present study will examine variables at the microsystem, mesosystem, and exosystem levels. In addition, the present study also included individual level factors. While Bronfenbrenner (1986) did not specifically include individual level factors in the ecological model, individual level factors have been included in many studies utilizing this framework (e.g., Atizaba-Poria & Pike, 2004; Ayoola, Nettleman, & Brewer, 2007; Voisin, DiClemente, Salazar, Crosby, & Yarber, 2006). Using the ecological model (Bronfenbrenner, 1986), counseling psychology has typically focused on the individual and microsystem levels of influence. However, researchers have suggested that it is important to examine other levels of the ecological model when considering the school-to-work transition (Worthington & Juntunen, 1997).

One aspect of the school-to-work transition that has received less attention is how these spheres of influence may affect an individual over time. That is, how problems at an early age may lead to difficulties with the school-to-work transition later in life. For example, research has found that basic literacy and numerical skill difficulty at age 10 was related to problems in the school-to-work transition later in life (Bynner, 1997).

Defining a successful school-to-work transition

A successful school-to-work transition occurs when individuals obtain jobs that allow them to be economically self-sufficient and can be of benefit. For example, researchers have suggested that a successful transition from school to work can have positive consequences for well-being as well for as identity formation (Nurmi & Salmela-Aro, 2002).

Job Attainment. Job attainment is defined as having any employment after completing or leaving school. Job attainment has typically been used to define a successful school-to-work transition (e.g., Bynner, 1997; Hartnagel, 1998; Neumark & Rothstein, 2005; Pinquart et al., 2003; Taylor, 2005). Research has found that finding a job was related to decreased depressive symptomology (Nurmi & Salmela-Aro, 2002) and not finding a job can lead to poorer psychological health due to financial strain (Ullah, 1990). Those who are not in school or working are at risk for experiencing poverty or dependency on others or public assistance (Brown, 1996; Brown & Emig, 1999). They also are more likely to have mental health problems and substance use problems (Wald & Martinez, 2003). For instance, research has found that among women, unemployment affects perceptions of self-worth with self-esteem positively related to time spent in the labor force (Goldsmith & Velum, 1996; Goldsmith & Velum, 1997).

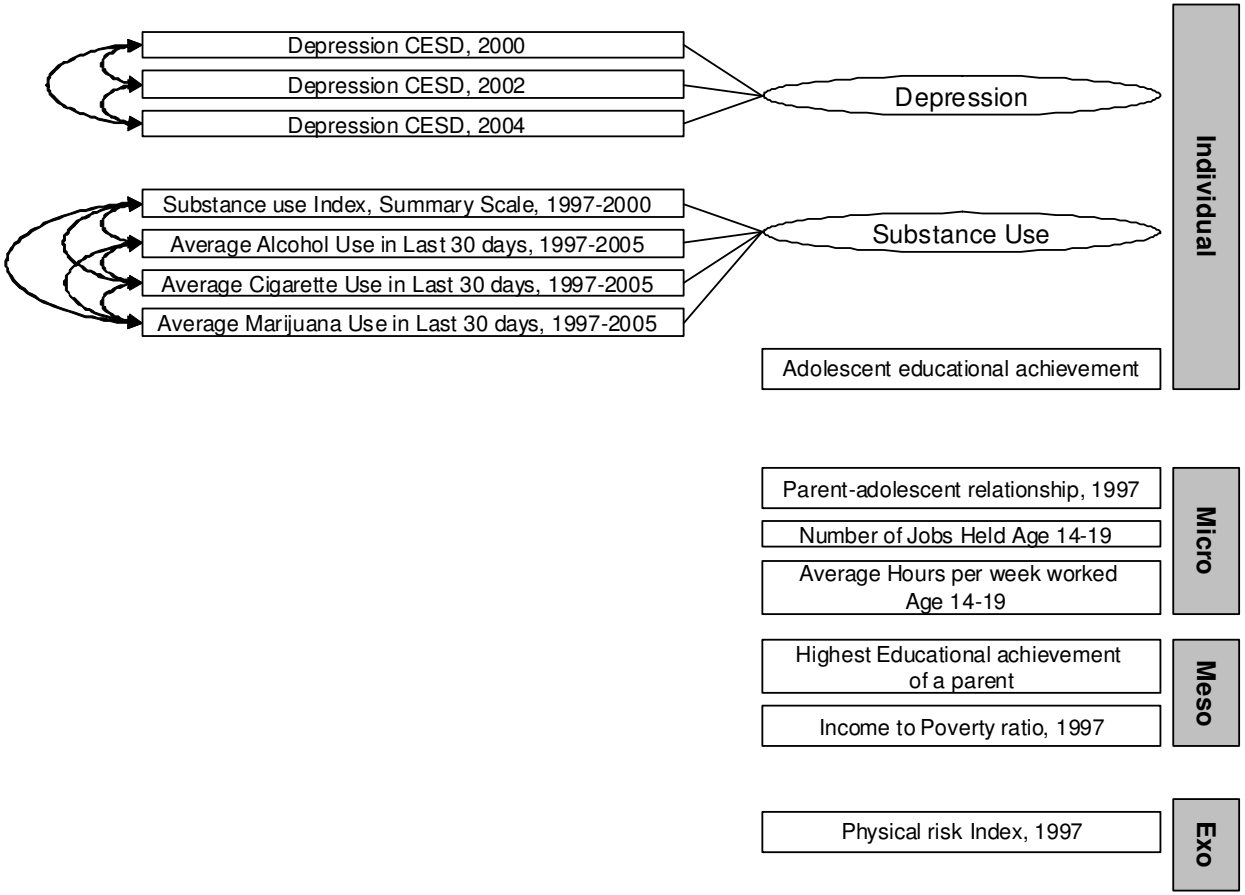
Employment Stability. Employment stability is defined as the length of time a job is held and a lack of moving from job to job. Research has suggested that increasing early employment stability may have beneficial effects for those making the school-to-work transition (Neumark, 2002). Unfortunately, finding a stable job can be a challenge for youth. Research has found that it takes approximately 5 years after leaving school before the average individual starts a job with a duration of 3 or more years (Yates, 2005). Researchers have expressed concern over individuals who move from one low paying job to another without settling into a longer employment relationship (Yates, 2005). It has been theorized that this process, known as “churning”, may represent a non-productive school-to-work transition (Neumark, 2002; Yates, 2005).

Job Quality. Job quality is defined as having a job with high hourly pay, fringe benefits, paid vacation days, and paid sick days. Less research has been conducted on job quality. Nonetheless, job quality has been related to increased job satisfaction (Stone & Josian, 2000). Neighborhoods with higher job quality have been connected to a lower crime rate (Staff & Uggen, 2003). While job quality is clearly a construct of importance, few studies examining school-to-work transition have considered job quality (Staff & Uggen, 2003; Uggen, 1999).

Predictors of a successful school-to-work transition

It is important to note that although employability skills are important for career success, there are many other factors which influence job attainment, stability, and quality (Worthington & Juntunen, 1997). Older but relevant research has found that more proximal factors such as academic performance, education, labor market participation in adolescence, and race all contribute to the combined length of employment and earnings (Meyer & Wise, 1982). More recent work has identified more distal factors such as familial, social, economic, and cultural factors as important for the school-to-work transition (Mann, Miller, & Baum, 1995). Thus, in the present study, we examined a comprehensive set of variables hypothesized to be related to employment outcomes. These variables were organized according to an ecological model (Bronfenbrenner, 1986) (see Figure 1). The individual level included personality, depression, substance use, and adolescent education level. The microsystem included the parent-adolescent relationship and employment in adolescence. The parent-adolescent relationship rests within the microsystem because parents are a social agent and have direct influence on an individual. Likewise, employment in adolescence involves the influence of work on an

Figure 1. Independent Variables Organized by Ecological Model



individual. In other words, employers are a social agent. The mesosystem included parent education level and poverty status. Parents education level indirectly affects youth (National Center for Education Statistics, 2000). Similarly, parents' poverty status indirectly influences adolescents. For example, poverty status has been connected with decreased cognitive ability, less school attendance, and high school dropout (Bradley & Corwyn, 2002; Dahl & Lochner, 2005). In other words, both of these factors are hypothesized to indirectly affect the individual. Bronfenbrenner categorized both of these factors as components of social class (Bronfenbrenner, 1986). Finally, the exosystem included neighborhood physical risk. Neighborhood physical risk indirectly affects an individual but is a factor in which an individual does not have an active role. In addition, several demographic and socioeconomic variables were controlled for.

Personality. In the present study, the most proximal and temporal predictor variable was personality. A widely used explication of personality is the five-factor model ("Big Five") of personality. Composed of extraversion, agreeableness, conscientiousness, emotional stability vs. neuroticism, and intellectual openness, the "Big Five" has been found to relate to employment outcomes (Furnham & Zacherl, 1986; Hair, Moore, Ling, Cleveland, & McPhee, 2006; Salgado, 1997; Smith, Organ, & Near, 1983; Tokar & Subich, 1997). For example, the Big Five personality traits have been linked to career decidedness among 12th grade students and researchers have suggested that personality traits can be used to identify students who may be at risk for career indecision (Lounsbury, Sundstrom, Loveland, & Gibson, 2005). In addition, agreeableness and conscientiousness in adolescence have been associated with avoiding negative employment and educational outcomes (e.g., being unemployed due to incarceration,

dropping out of high school) (Hair et al., 2006). Agreeableness and conscientiousness also have been associated with achieving desirable outcomes (e.g., enrolling in college preparatory level courses or receiving income) (Hair et al., 2006). Likewise, agreeableness and conscientiousness have been linked to job performance (Kieffer, Schinka, & Curtiss, 2004).

Depression. Depression also was an independent level variable. Psychologically, transition creates an atmosphere of chaos where people may feel that they have little or no control over their lives (Skar, 2004). Transition also has been linked to depression (Beeber, 1999; Fisher & Hood, 1987). Specifically, researchers have found that the transition process results in an increase in level of depression. Indeed, depressive symptomology has been related to the school-to-work transition (Maatta, Nurmi, & Majava, 2002).

Substance Use. While less proximal than personality or depression, substance use is still a proximal individual level predictor variable that consistently has been found to relate to negative employment and academic outcomes. For example, youth who report that they smoke, drink, or use marijuana are 50% more likely to become disconnected (i.e., not in school or employed) (Hair, 2005). Youth who report that their peers engage in smoking, drinking, and substance use are much more likely to spend extended periods of time unemployed and not in school (Hair, 2005).

Adolescent educational attainment. The final individual level predictor variable in the present study was adolescent educational attainment. Previous research has suggested that educational attainment may be important for job quality. For example, educational attainment has been related to the length of time at a job where youth with more

education hold jobs longer (Yates, 2005). High school dropouts were least likely to have had a stable employment relationship lasting more than two years even though these adolescents had spent the longest time in the workforce (Yates, 2005). Educational attainment also may be important for simply holding a job. In 1997, full-time employment rates were lowest for high school dropouts and positively correlated with the level of education (American Youth Policy Forum, 1998). These data showed that the employment rate was 35% for high school dropouts and 60% for high school graduates (American Youth Policy Forum, 1998). This finding suggested that simply graduating from high school can have benefits for adolescent employment outcomes. Additionally, high school completion has been associated with reduced risk of sustained unemployment and criminal behavior (Hartnagel, 1998). Similarly, grades at age 12 to 15 have been related to employment as well as job satisfaction at age 21 (Pinquart et al., 2003).

Parent-Adolescent Relationship. Moving outwards to the micro level of the ecological model, parent-adolescent relationship has been examined by research. The parent-adolescent relationship represents the direct influence of parents on youth. Consistent with theory on micro level predictors, youth play an active role in the parent-adolescent relationship. Indeed, family members and other significant individuals are important for a successful school-to-work transition (Blustein, Phillips, Jobin-Davis, Finkelberg, & Roarke, 1997). Accordingly, it is not surprising that parent-adolescent relationship also has been connected to academic and employment outcomes. For example, parental involvement in school has been found to be a predictor of employment outcomes for youth. Specifically, youth whose parents attended parent-teacher association meetings and volunteered to help at a child's school or classroom were 11%

less likely to not be in school or not have a job later in life (Hair, 2005). Further, research has found that financial, emotional, or motivational support can improve a youth's chances for success in adulthood (Cook, Herman, Phillips, & Settersten, 2002; Furdstenberg, Rumbaut, & Settersten, 2005; Osgood, Foster, Flanagan, & Ruth, 2004; Settersten, 2005; Shoeni & Ross, 2005).

Employment in Adolescence. Employment in adolescence, another micro level predictor variable, has been linked to future employment outcomes for adolescents. Employment in adolescence is considered a micro level predictor because it represents the influence of work on the adolescent. In addition, consistent with theory on micro level predictors, youth have an active role in work. It has been suggested that moderate amounts of youth employment seem to be beneficial for adolescents (U.S. Department of Labor, 2000). In addition, adolescents who never worked in adolescence are more disadvantaged than their working peers (Leventhal, Graber, & Brooks-Gunn, 2001). Specifically, adolescents who had employment experiences were more likely to complete high school and attend college (Leventhal et al., 2001). Other research has found similar results with employment in adolescence being correlated positively with educational attainment (Sum, Fogg, & Mangum, 2000).

Parent education level. Parent education level has been less studied with regard to its effects on the school-to-work transition. However, recent analyses have included this variable when examining populations not in school or working (Hair et al., 2007; MaCurdy et al., 2006). Specifically, parent education level has been associated negatively with becoming disconnected (Hair et al., 2007). Further, in some populations, parent

education level has been related positively to adolescents' school attendance, attainment, and work participation (Arends-Kuenning & Duryea, 2006).

Poverty status. Poverty status is a mesosystem predictor variable because parents who are a microsystem social agent, have influence over poverty status. Researchers have suggested that social class may play a role in the school-to-work transition (Blustein et al., 2002). Specifically, individuals from higher socioeconomic statuses reported a greater interest in work, greater access to external resources, and greater levels of career adaptability (Blustein et al., 2002). It has been suggested that difficulties in school-to-work transition most aversely affect those at economic disadvantage (Worthington & Juntunen, 1997). Additionally, socioeconomic status has been related to a perception of fewer future job opportunities (Weinger, 1998).

Physical risk. At the exosystem level and the most distal of the variables in the present study was physical risk. Although less research is present on the effects of physical risk on the school-to-work transition, existing studies suggested that communities and neighborhoods do matter for a successful school-to-work transition. For example, research has found that the type of school-to-work training an adolescent participates in was related to neighborhood characteristics (Ainsworth & Roscigno, 2005). In addition, neighborhood characteristics have been connected to dropping out of school (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993) and urban youth have been found to have less stability in career aspirations than youth in rural areas (Hartung, Porfeli, & Vondracek, 2005). Research has suggested that employers are not likely to attribute positive work characteristics to youth who are educated or reside in the inner city (Kantor, 1994). It has been suggested that communities are a target for promoting

healthy school-to-work transitions (Zeldin & Charner, 1996). As a result, it is important to consider the role of neighborhood when examining school-to-work transition.

Summary

To summarize, many studies have examined school-to-work transition (both with high school completers and high school dropouts). Specifically, previous research has focused on attainment of employment and the variables related to the attainment of employment (e.g., Bynner, 1997; Hartnagel, 1998; Pinquart et al., 2003; Taylor, 2005). However, few studies have examined employment stability or job quality as an important outcome for youth who are transitioning into the workforce. Additionally, few studies have examined a comprehensive set of predictor variables using a nationally representative, longitudinal sample to understand the school-to-work transition of non-college bound youth.

Counseling psychologists are in a unique position to address the school-to-work transition of non-college bound youth (Blustein et al., 1997; Fouad, 1997). However, to do so, we need more information on successful school-to-work transitions beyond simply the attainment of a job. Thus, the present study examined the predictors of job attainment, stability, and quality among a nationally representative sample of youth who do not attend college after graduating high school. The model posited included demographic and background factors, youth characteristics, family processes, and community characteristics.

Thus, this study addressed the following research questions: "What were the predictors of job attainment, stability of employment, and job quality for youth who are making the school-to-work transition?" Specifically, we were interested in whether there

were variables in adolescence that predict job attainment, stability, and quality among non-college bound youth. In addition, because previous literature has suggested that it is important to account for diversity in the school-to-work transition among non-college bound youth (Worthington & Juntunen, 1997), the present study accounted for race, socioeconomic status, and gender with regard to the predictors of job attainment, stability, and quality.

Chapter II: Review of the Literature

The present study contributed to the school-to-work literature by examining a comprehensive set of predictors of a successful school-to-work transition using a nationally representative sample of non-college bound youth followed longitudinally. Specifically, the present study examined not only job attainment but also employment stability and job quality in this sample. To begin exploring the many variables related to school-to-work transition, it was important to review the current literature on the constructs of transition theory and school-to-work transition of non-college bound youth. This research provided a base from which to build further research. This section begins with a discussion of transition and the ecological model. Next, the population of relevance to the present study is defined and studies on this population (i.e., the school-to-work transition of the "forgotten half") are summarized. Following this review, the literature on individual, micro-, meso-, and exosystem predictor variables is summarized. In addition, this review presents a review of the relevant literature on job attainment, employment stability, and job quality. This review of literature concludes with research questions pertaining to the successful school-to-work transition of non-college bound youth.

Transition

Since school-to-work represents an important transition, it is important to understand the theory behind transition. Transition occurs when a person experiences change (Brammer, 1992; Schlossberg, 1981, 1995). This change can be expected or unexpected and occur at any point in a person's life. However, in all cases, transition is a sharp change in a person's typical life routines (Brammer, 1992). In this sense, transition

excludes events such as the adolescence and includes events such as separation, unemployment, or change in residence (Brammer, 1992). Transition can be defined as an event or nonevent that changes relationships, routines, roles, and assumptions (Schlossberg, 1995). It is an interactive process that incorporates the way a person views the transition, the nature of the transition, the coping resources a person has, and the person-environment interaction (Schlossberg, 1981). Transition tends to make new demands of individuals and may place them at risk for a variety of consequences (Brammer, 1992). While some transitions can be seen as positive, many transitions are viewed as negative, painful, or tragic (Brammer, 1992).

Perhaps one of the most recognized conceptualizations of the transition process is "Schlossberg's 4 S's." Schlossberg (1995) identified four factors that affect the type of consequences an individual in transition experiences: Situation, Support, Self, and Strategies (i.e., the 4 S's). Situation refers to the type of transition a person is experiencing. This includes whether the individual views the transition as voluntary or involuntary, expected or unexpected, and positive or negative. Self refers to the characteristics an individual brings to the transition situation. Examples of "Self" include whether the individual has made a similar transition previously, and the individual's predisposition to dealing with transitions. Support refers to the social network a person has in dealing with the transition. For example, does the individual experiencing transition have friends, family, or other persons they can rely on for assistance through their transition? Finally, Strategies refers to the approach an individual has for coping with the transition. Schlossberg posited that whether an individual has strengths and assets in each of these areas affects his or her ability to adapt to transition. Schlossberg

(1995) stated that individuals need to assimilate transition into their lives to avoid remaining preoccupied with the transition experience.

Transition creates an atmosphere of chaos where a person feels that they have little or no control over their lives (Skar, 2004) and this can affect individuals and their performance. Indeed, empirical research has shown that transitions of all types results in a variety of consequences (e.g., Beeber, 1999; Fisher & Hood, 1987; Zirkel, 1992). In the school-to-work transition, many proximal factors such as academic performance, education, labor market participation in adolescence, family background, and race have been known to influence the school-to-work transition (Meyer & Wise, 1982). For instance, transition also has been linked to depression (Beeber, 1999; Fisher & Hood, 1987) and researchers have found that the an school-to-work transition may be related to level of depression (Bynner, 1997). Likewise, more distal factors such as educational, familial, social, economic, and cultural factors also were found to be important for the school-to-work transition (Mann et al., 1995).

Ecological Model

To provide a framework for organizing the factors related to a successful school-to-work transition, the present study utilized an ecological model. Bronfenbrenner (1986), posited an ecological model of development whereby individuals are influenced by a variety of factors from proximal to distal. The model is organized around a nested set of subsystems. At the most proximal level is the microsystem which includes the client's immediate environment (e.g., parents, significant others, health services, peers). In other words, the microsystem includes social agents that have direct interactions with an individual. The mesosystem connects the components of the microsystem (e.g., the

interaction between family and peers, the connection between school experiences and work experiences). The mesosystem also includes connections between the multiple contexts in which an individual may develop. The exosystem consists of the social settings in which the client has no active role (e.g., the work setting of one's significant other, neighbors, city government, or mass media). The macrosystem consists of ideologies and attitudes of the culture. Finally, the most distal influence is the chronosystem which refers to the environmental events and patterns over life. While Bronfenbrenner (1986) did not include individual level factors in the ecological model, individual level factors have been included in many studies utilizing this framework (e.g., Atizaba-Poria & Pike, 2004; Ayoola et al., 2007; Voisin et al., 2006). The ecological framework was utilized in the present study as a developmental theory. This was consistent with calls in the counseling psychology field to integrate developmental psychology into vocational development (Gelso & Fassinger, 1992; Solberg, Solberg, Howard, Blustein, & Close, 2002)

Indeed, several studies examining the school-to-work transition, and more broadly career development have utilized an ecological framework (e.g., Ainsworth & Roscigno, 2005; Cook, Heppner, & O'Brien, 2005; Worthington & Juntunen, 1997). Cook and colleagues (2005) utilized an ecological framework to examine the vocational development of women. They found that factors at all levels were important for the career development of women. For instance, educational experiences that influence stereotypes and race and gender matched role models at the microsystem both play a role in women's career development. The researchers suggested that counselors need to consider multiple levels to effectively work with clients.

In addition, Ainsworth and Roscigno (2005) examined various factors related to occupational trajectory using a nationally representative sample. They found that academic achievement in 8th grade, family structure, involvement in vocational education, and living in an urban neighborhood were related to whether an adolescent attended college or dropped out of school.

Finally, Worthington and Juntunen (1997), in their milestone review of how counseling psychology fits into the school-to-work movement, suggested that the developmental social ecological model (Bronfenbrenner, 1986) is ideal for considering the school-to-work transition. They stated that counseling psychology research has typically focused on the individual and microsystem levels of influence and that school-to-work research should examine other levels of the ecological model when considering the school-to-work transition (Worthington & Juntunen, 1997). Specifically, Worthington and Juntunen (1997) recommended that counseling psychologists should consider contextual frameworks that account for more than just individual factors when researching the school-to-work transition.

Forgotten Half/Disconnected Youth

The transition to adulthood can have many bumps in the road. No where is this seen more than with youth who do not attend college either due to dropping out of high school or other reasons. About a third of the class of 2006 was not enrolled in college that fall (Bureau of Labor Statistics, 2007a). This population of non-college bound youth has been referred to in the literature as "the forgotten half" as they represent an understudied population (American Youth Policy Forum, 1998; Blustein et al., 2002; Neumark & Rothstein, 2005). These youth tend to have difficulty finding employment, drift from one

job to another, and end up in jobs lacking advancement opportunities (Smith & Rojewski, 1993). Furthermore, they do not have access to the same types of resources afforded college bound youth. For example, youth who do not go to college receive less federal aid than those who do; federal aid is disproportionately directed towards enhancing secondary instruction and not the school-to-work transition (U.S. General Accounting Office, 1993). In addition, these youth tend to be ignored by guidance counselors in high school who tend to focus on college attendance (Rosenbaum, 2001). Since these youth tend to be out of touch with traditional support systems and services, some researchers refer to them as "disconnected" (Brown & Emig, 1999; MaCurdy et al., 2006).

The non-college bound population tends to be ignored by career development theories which tend to address only 15% to 25% of the population (Worthington & Juntunen, 1997). Indeed, current career development theories have been criticized as focusing on the needs of the most economically and educationally advantaged youth (Worthington & Juntunen, 1997).

Research has identified many factors related to becoming disconnected. These include receiving welfare or family poverty (Brown, 1996; Brown & Emig, 1999; Houseman, 2003), having a parent with a low level of education, as well as being a minority (Brown, 1996),

MaCurdy and colleagues (2006) examined a sample of 3,717 individuals to determine which factors predicted becoming disconnected. The researchers found that while men and women were equally likely to experience disconnection, one was at risk for becoming disconnected if they had a parent who did not finish high school. In addition, they found that Black youth were more likely to experience disconnection than

white youth. Interestingly, the researchers found that for many of the respondents in their study, disconnection tended to occur at age 19 which is around the time that youth are transitioning between high school and college or the workforce. These findings suggested that parent educational attainment and race/ethnicity may be related to the school-to-work transition. In addition, MaCurdy and colleagues (2006) found that being disconnected could result in negative outcomes such as lower earnings, fewer weeks employed, participation in illegal activities, and delinquent behavior.

Blustein and colleagues (2002) used a qualitative methodology to examine the role of social class in the school-to-work transition. They specifically examined a group of youth who had dropped out of high school. While none of their sample had completed college, their sample did include those who had started a 4-year college and not finished or were attending a community college part time. As a result, their findings may not be as applicable to the population of interest in the present study. Nonetheless, the researchers found that participants from different social classes viewed their careers in different ways. While those from a high socioeconomic status (SES) related their careers to personal satisfaction and meaning, those from low SES viewed their career as primarily a means of economic survival. In addition, those from high SES reported more support in their careers. This suggested that not only income and SES are important for the school-to-work transition, but also outside support may play an important role. This finding was echoed by Wald and Martinez (2003) who reviewed the characteristics of those who disconnect. They found that, among other factors, risk for disconnection was associated with a lack of emotional and social support.

It is quite clear that disconnected youth are a population in need of services. Recent estimates find that $80 billion in lost earnings results from disconnected youth (Houseman, 2003). Since non-college bound youth are understudied and underserved, it is critical to understand their school-to-work transition and be able to identify those most at need. Rosenbaum (2001) suggested that by identifying these youth in high school, they can be directed to a successful non-college bound school-to-work track. The next section describes some efforts that have already been made to address the school-to-work transition.

School-to-work transition

Historically, schools have not adequately prepared youth for the workforce or college (Mithaug, 1994). In the 1980's, the National Commission on Excellence in Education (1983) stated that, "if an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war" (p. 9). Clearly, preparation for the workforce is an area that has been of concern for policymakers. In 1994, the School-to-Work Opportunities Act (STWOA) was created to examine youth that enter the workforce. This act included partners such as employers, educators, parents, labor unions, and community-based organizations (U.S. Department of Education, 1994). The STWOA was designed to connect school-based learning and work-based learning for college bound youth as well as non-college bound youth. However, the act received most praise for its benefits on non-college bound youth (Imel, 1999). The STWOA was transferred to state and local control in 2001, however the efforts of the act continue to be carried on by government entities.

An interesting aspect of the STWOA was that despite the fact that counseling psychology has historically emphasized career development, counseling psychologists' were not explicitly mentioned as a partner in the School-to-Work Opportunities Act. In a special issue of The Counseling Psychologist, Worthington and Juntunen (1997) called for counseling psychologists to become involved in the school-to-work movement. Specifically the authors suggested that counseling psychologists could contribute to the STWOA through developing theory, integrating diversity into school-to-work research, collaborating with other professionals, helping with adolescent vocational development, actively offering counseling skills to practice, training, and publications, applying existing literature to inform practice, making research contributions, developing programs, and influencing policy. Even though the STWOA has expired, school-to-work remains a topic area where counseling psychology can make a contribution.

The transition from school-to-work has been identified in the literature as challenging and littered with various undesirable outcomes. Hartnagel (1998) examined the school-to-work transition of a sample of 223 youth over four years. Participants in this study were not enrolled in school during the various follow-ups. Hartnagel (1998) used self-report data to determine how criminal behavior was related to the school-to-work transition. He found that difficulties with unemployment and employment stability were not related to an increase in criminal behavior. However, the researcher stated that his sample was relatively healthy and that a sample of more economically stressed individuals may have become involved in crime. This research suggested that socioeconomic status may be related to the school-to-work transition.

Another study by Blustein and colleagues (1997) examined 45 men and women ages 18 to 29 about their school-to-work transition. The researchers utilized a grounded theory qualitative approach to examine two factors of a successful school-to-work transition: job satisfaction and congruence. Results of the study indicated that life satisfaction was associated with job satisfaction. In other words, a positive outlook on life was related to a successful school-to-work transition. Self-exploration also was related to job satisfaction as was environmental exploration; those youth who explored their vocational environments had higher job satisfaction. Likewise, having tangible support from significant relationships was related to a successful school-to-work transition. The researchers found that this tended to be associated with financial support. In addition to the findings on job satisfaction, the researchers found that congruence was related to environmental exploration, a flexible decision making style, and paternal support (Blustein et al., 1997). From this study by Blustein and colleagues (1997), one can infer that psychological well-being, employment in adolescence, poverty level, and support from others is related to a successful school-to-work transition. Thus, we included measures of these variables in the present study.

Efforts to assist youth in the school-to-work transition have led to the development of various intervention programs. Most of these programs are focused on youth who have already left school due to graduation or dropping out (Hair, Ling, & Cochran, 2003). However, several researchers have suggested that targeting adolescents in school may lead to positive school-to-work outcomes (Neumark & Rothstein, 2005; Pinquart et al., 2003; Smith & Rojewski, 1993). For example, research has found that basic literacy and numerical skill difficulty at age 10 was related to problems in the

school-to-work transition later in life (Bynner, 1997) suggesting that early intervention may be effective in influencing the school-to-work transition. However, it is first important to define a successful school-to-work transition. The next section examines the various indicators of a successful school-to-work transition. Specifically, the literature on job attainment, employment stability, and job quality are reviewed.

Indicators of a successful school-to-work transition

Job Attainment. The school-to-work transition by definition includes job attainment. In the present study, we defined job attainment as having any employment in the previous year. Previous research used any employment in a given time period as a definition of job attainment (Boushey, 2002). This also was the methodology used by the Bureau of Labor Statistics to define employment (Bureau of Labor Statistics, 2007b). Not surprisingly, research has commonly used job attainment as a characterization of a successful school-to-work transition (e.g., Bynner, 1997; Hartnagel, 1998; Neumark & Rothstein, 2005; Pinquart et al., 2003; Taylor, 2005). Research has found that finding a job was related to decreased depressive symptoms (Nurmi & Salmela-Aro, 2002) and not finding a job can lead to poorer psychological health due to financial strain (Ullah, 1990). Those who are not in school or working are at risk for experiencing poverty or dependency on others or public assistance (Brown, 1996; Brown & Emig, 1999). They also are more likely to have mental health problems and substance use problems (Wald & Martinez, 2003). For example, Nurmi (2002) examined a sample of 250 youth who were making the transition from school to work. The researchers were interested in the youths' goals while they made the transition to the work force. They also examined depressive symptoms among the sample. Results of the study indicated that depressive symptoms

were related to work goals but only for those youth who found a job. While this research is limited in that it did not look at causal relationships, it was nonetheless interesting to note the connection between job attainment and mental health. Research also has found that among women, unemployment affects perceptions of self-worth with self-esteem positively related to time spent in the labor force (Goldsmith & Velum, 1996; Goldsmith & Velum, 1997).

Goldsmith and colleagues (1996) examined the psychological consequences of unemployment. Specifically, the researchers were interested in the negative psychological impacts of not finding a job and how locus of control may play a moderating role. Using a nationally representative sample of youth, they found that being unemployed was related positively to depression, however only for women in their sample. In another study, Goldsmith and colleagues (1997) further examined how joblessness is connected to depression and self-esteem. As with their previous study, the researchers found that joblessness was related positively to depression, but only for women. Together, these studies pointed to the importance of controlling for gender when examining the school-to-work transition.

Employment Stability. In addition to job attainment, research also has found that early employment stability can have beneficial effects for the school-to-work transition (Neumark, 2002). Employment stability over time during the school-to-work transition can have positive benefits on later employment outcomes. For example, Neumark (2002) examined the early labor market experiences of a longitudinal sample of youth. He sought to determine whether instability in job experiences during adolescents' early careers were related to later labor market consequences. Results of the study indicated

that employment stability during early career was related positively to wages later in life. It has been theorized that the process of not finding stable employment, known as "churning", may represent a non-productive school-to-work transition (Neumark, 2002; Yates, 2005).

Unfortunately, finding a stable job can be a challenge and churning is a common occurrence. For example, Yates (2005) used a nationally representative sample of youth to examine the school-to-work transition process, specifically she examined the duration of employment and how long it took for youth to establish stable employment. She found that it takes approximately 5 years after leaving school before the average individual starts a job with a duration of 3 or more years (Yates, 2005). Yates (2005) expressed concern over individuals who move from one low paying job to another without settling into a longer employment relationship (Yates, 2005).

However, not all research supports the assertion that employment stability is important for the school-to-work transition. In fact, researchers have argued for the benefits of employment stability (Yates, 2005) as well as the benefits for 'job shopping' (Gardecki & Neumark, 1998; Neumark, 2002). For example, Gardecki and Neumark (1998) examined a group of 9,083 adolescents school-to-work transitions. The researchers were interested in whether faster transitions to stable employment resulted in better adult labor market outcomes. The results suggested that employment stability in early career was not related to wages later. However, the researchers did find that job characteristics in the school-to-work transition such as jobs with health insurance or pension plans were related to adult labor market outcomes. This suggested that job

quality was an important part of the school-to-work transition. The next section discusses the limited research on job quality during the school-to-work transition.

Job Quality. In the present study, we defined job quality as a job with high hourly pay, fringe benefits, paid vacation days, and paid sick days. Researchers typically characterized the school-to-work transition in terms of job attainment and stability; less research has been conducted on job quality. Indeed, researchers have called for job quality as a construct that requires further examination in the school-to-work literature (Stone & Mortimer, 1998). Despite the dearth of research on this construct, job quality is an important component of a successful school-to-work transition.

For instance, Stone (2000) examined 1,800 adolescents in employment programs and found that job quality was associated positively with increased job satisfaction. Stone (2000) also found that job quality was associated positively with work attitudes and associated negatively with negative job behaviors. In addition, factors such as job security and high income tend to become more important during the transition from school to work (Daehlen, 2007).

In addition to the research available on how job quality relates to the school-to-work transition, there also was evidence that job quality is beneficial for the general population. For instance in an older study, Vecchio (1980) examined a sample of 3,062 full-time male workers and found that job quality and job satisfaction were related positively. Likewise, Breaugh and Frye (2007) examined how job benefits were related to job satisfaction. They used a sample of 187 individuals who were working and had a dependent. The researchers found that the availability of family-friendly benefits in the

workplace was related negatively to family-work conflict and positively to job satisfaction.

Despite the limited literature on job quality and the school-to-work transition, current research implies that this is a construct that needs to be studied in future research. As a result, we included measures of job quality in the present investigation.

Summary. As seen in the literature, job attainment, stability, and quality all have been used as indices of a successful school-to-work transition. While previous research suggested that employability skills are important for career success, many other factors also influence the school-to-work transition (Worthington & Juntunen, 1997). For example, older but relevant research has found that more proximal factors such as academic performance, education, labor market participation in adolescence, family background, and race all contribute to the combined length of employment and earnings (Meyer & Wise, 1982). Along the same lines, more recent work has identified more distal factors such as educational, familial, social, economic, and cultural factors as important for the school-to-work transition (Mann et al., 1995). Accordingly, it was important to examine a variety of predictors of a successful school-to-work transition. The following section describes existing research on potential predictors of a successful school-to-work transition. Specifically, the literature on personality, depression, substance use, and adolescent education level as individual level variables was reviewed. At the microsystem, the literature on parent-adolescent relationship and employment in adolescence was summarized. At the mesosystem, the research on parent education level, and poverty status was described. Finally, at the exosystem, we examined research on neighborhood physical risk.

Individual Level Variables

Personality. As the most proximal and temporal predictor variable in the present study, personality has been related to various employment outcomes (e.g., Furnham & Zacherl, 1986; Hair et al., 2006; Salgado, 1997; Smith et al., 1983; Tokar & Subich, 1997). In the present study, we defined personality with two dimensions: agreeableness and conscientiousness. These two dimensions are part of the five-factor model of personality ("Big Five"). The five-factor model of personality includes extraversion, agreeableness, conscientiousness, emotional stability (which is sometimes called neuroticism), and intellectual openness. Many studies use the five-factor model of personality (Goldberg, 1992). Due to the limitations of the dataset in the present study, only assessments of agreeableness and conscientiousness were available. Nonetheless, research examining multiple aspects of personality found associations between personality and various employment outcomes.

One study examined 516 employed adults to determine the relative contribution of personality to job satisfaction (Tokar & Subich, 1997). While previous research found that congruence between personality variables and job was predictive of satisfaction, the researchers in the aforementioned study found that it was personality traits and not congruence that was predictive of job satisfaction. Specifically, they found that greater extraversion and lesser neuroticism were predictive of greater job satisfaction (Tokar & Subich, 1997). The results of this study suggested that regardless of how personality traits function, they were important for career. In another study, Lounsbury and colleagues (2004) examined a sample of 252 production workers in a manufacturing setting as well as a sample of 922 high school students. The researchers looked to determine the

relationship between personality variables and job performance and academic performance. The researchers found that personality traits were not only related to job performance but also academic performance. The researchers concluded that personality might be used to predict both in school performance as well as work performance (Lounsbury et al., 2004).

Career decidedness also has been examined. Lounsbury, Hutchens, and Loveland (2005) examined the relationship between personality and career decidedness. Using a sample of 248 seventh-grade, 321 tenth-grade, and 282 twelfth-grade students, the researchers found that conscientiousness was related to career decidedness in all three samples as were openness and agreeableness. However, the researchers found that emotional stability was only related to career decidedness in twelfth grade. The researchers stated that the relationship between conscientiousness and career decidedness may have been due to its association with academic performance and the resulting attention from teachers. The researchers also theorized that openness and agreeableness may have led to more attention from teachers and counselors who might influence the career development process. Nonetheless, these results lend support to the use of agreeableness and conscientiousness as predictor variables in the present study as well as the importance of using personality to identify those that may experience difficulty in the school-to-work transition.

The link between personality and employment variables also has been found using meta-analysis. Salgado (1997) examined 36 studies that looked at job performance and the five-factor personality model and found that there was a relationship between job performance and personality traits. Salgado (1997) found that the strongest relationships

to personality traits were with emotional stability and conscientiousness. Similarly, Dudley and colleagues (2006) examined the influence of conscientiousness on job performance and found that while there were other traits predicting job performance, conscientiousness was significant in the prediction of job performance.

It appears that many studies find small associations between employment variables and personality, however these results tend to be consistent across studies. Furnham and colleagues (2002) used a sample of 82 participants to examine the relationship between job satisfaction and the five-factor personality model. They found that personality only predicted about 10% of the variance in various job satisfaction ratings. However, the authors noted that 10% was not a trivial number. In addition, Furnham and colleagues (2002) found that conscientiousness was the only predictor of global job satisfaction. This lent support to the use of conscientiousness in the present study. Likewise, Hair and colleagues (2006) examined a nationally representative group of 5419 adolescents to determine how agreeableness and conscientiousness were related to being in school or employed. They found that after controlling for other youth characteristics and parental influences, that agreeableness and conscientiousness still accounted for a significant amount of variance (β=.05) in being in school or being employed. In another study, Kieffer and colleagues (2004) examined a sample of 514 employees to determine how personality, congruence, and other aspects of the RIASEC personality theory (Holland, 1994) influence job performance and work quality. The researchers found that only agreeableness and conscientiousness were predictors of work performance.

Personality also was related to other variables important for career. For instance, Lounsbury and colleagues (2003) examined the relationship between academic performance and personality using a sample of 220 seventh-graders and 290 tenth-graders. In addition to measuring academic performance and the five factor personality traits, the researchers also were able to control for aggression, tough-mindedness, and work drive. Results of the study indicated that personality traits accounted for between 10% to 15% of the variance in academic performance. This suggested that personality may at least partially operate on employment outcomes through its influence on academic performance. Thus, it was important to account for both personality as well as academic performance when examining career.

Depression. Another important proximal independent variable is depression. In the present study, we defined depression as the presence of depressive symptoms. Depression is a common measure of psychological well-being which is defined as experiencing a majority of the following symptoms during the same two week period: depressed mood, diminished interest or pleasure in activities, significant weight loss, gain, or change in appetite, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or inappropriate guilt, impaired ability to concentrate or indecisiveness, or recurrent suicidal thoughts (American Psychiatric Association, 1993). The experience of these symptoms must affect a person's previous level of functioning (American Psychiatric Association, 1993). Since transition creates an atmosphere of chaos where people may feel that they have little or no control over their lives (Skar, 2004), it followed that depression may be related to difficulty in the school-to-work transition. Indeed, depression was related to the transition

process (Beeber, 1999; Fisher & Hood, 1987). Specifically, depressive symptomology was related to the school-to-work transition (Maatta et al., 2002).

Maata and colleagues (2002) examined 250 youth who were transitioning from school to work. The researchers surveyed the sample in the last semester of their schooling and followed up 8 and 18 months later. At each time point, the participants completed a measure of attribution strategy and a measure of depression. At the 8 and 18 month follow-ups, participants also completed a work status questionnaire. Results of the study indicated that attribution strategies such as the lack of internal attributions for failure led to a successful transition to work as well as a lower level of depressive symptomology (Maatta et al., 2002).

In another study, Bynner (1997) examined the skills needed for a successful school-to-work transition using a large longitudinal sample in Britain. He found that depressive symptoms were related to having fewer basic skills sought by employers. These basic skills consisted of reading, writing and spelling, number work, and several tests of functional literacy. Bynner explained that a deficit in these skills would result in difficulty with the school-to-work transition. Bynner (1997) suggested that the accompanying depressive symptomology would further exacerbate career problems.

Other research also found links between depression and employment outcomes. For instance, Borgen, Amundson, and Tench (1996) examined a sample of 172 high school leavers. They classified high school leavers as those who graduated from high school and progressed to further schooling, work, or unemployment. The researchers found that depression was related to factors such as difficulty with finances and managing activities as well as satisfaction with the work environment. Interestingly,

Borgen and colleagues (1996) did not find a relationship between employment status and depression. This contrasts other research suggesting that youth who are not in school or working are more likely to suffer from mental illness (Wald & Martinez, 2003).

Depression also was related to job status. Zimmerman, Christakis, and Vander Stoep (2004) examined the relationship between depression and work attributes using a nationally representative sample comprised of 3753 men and 3525 women. The researchers examined a comprehensive set of job attributes including social status, job security, and a physically uncomfortable work environment. The researchers found that the social status of a job was related to level of depression such that those holding a higher social status job had lower levels of depression. The researchers theorized that it may be possible that depression leads individuals to accept lower status jobs or that low status jobs may increase the risk for depression. The inclusion of depression in the present study could explicate the causal relationship between depression and job status.

Substance Use. Substance use consistently has been found to relate to negative employment and academic outcomes. For example, youth who report that they smoke, drink, or use marijuana are 50% more likely to become disconnected (i.e., not in school or employed) (Hair, 2005). One study by Brook, Balka, and Johnson (2002) examined 1148 youth. The youth were given questionnaires in their classrooms (ranging from 7th to 10th grade) and again 5 years later when most respondents were between 16 and 25. The researchers examined marijuana use in adolescence and its effects on a variety of outcome variables in three domains: relationship with significant others, school and work, and conformity to societal expectations. The researchers found that marijuana use was related to lower educational and occupational expectations, as well as being

terminated from a job and collecting welfare. The researchers found that marijuana use was not related to any of their relationship with significant other measures (Brook et al., 2002).

In addition, substance use has been found to relate to difficulty with the school-to-work transition. For example, Hartnagel (1997) examined 223 youth who were transitioning to the workforce. Data were gathered from youth at baseline and again at 12, 24, and 48 months later. Hartnagel (1997) specifically asked about the use of illegal drugs during each time period as well as criminal activity. Results of the study indicated that drug use was related to a perception of financial difficulty as well as minor crime. The researchers also found that prior drug use was related to later drug use. Hartnagel (1997) concluded that drug use may represent a coping mechanism for adolescents who are having difficulty with the school-to-work transition.

Several studies also found that substance use may be related to other predictor variables in the present study suggesting that substance use may partially affect employment outcomes indirectly through its influence on other variables. For instance, Paternoster and colleagues (2003) examined how teenage employment was related to substance use, delinquency, and problem behaviors. The researchers used a nationally representative sample of approximately 6,500 adolescents in their analyses. Results of the study indicated that substance use was related to work intensity such that adolescents who worked more than 10 hours a week were more likely to engage in substance use (i.e., alcohol, cigarettes, and marijuana). Likewise, Koch and McGeary (2005) examined a nationally representative sample to determine the influence of alcohol use on high school completion. Specifically, the researchers were interested in whether age of initiation of

alcohol use affected high school completion. Results of the study indicated that consumption of alcohol where initiation of use was by age 14 reduced the probability of high school completion. In other words, alcohol use in early adolescence related to a lower probability of completing high school. Since substance use may influence other predictor variables, it was important to look at the degree to which substance influences employment outcomes.

Adolescent educational achievement. Adolescent educational attainment has been examined in the literature and many studies have found educational attainment related to a successful school-to-work transition. At the very basic level educational attainment may be important for job attainment. In 1997, full-time employment rates were lowest for high school dropouts and positively correlated with the level of education (American Youth Policy Forum, 1998). These data showed that the employment rate was 35% for high school dropouts and 60% for high school graduates (American Youth Policy Forum, 1998). This finding suggested that simply graduating from high school can have benefits for adolescent employment outcomes. Indeed, high school completion has been associated with reduced risk of sustained unemployment and criminal behavior (Hartnagel, 1998).

Miller and Porter (2006) examined the barriers to employment using a sample of 1136 economically disadvantaged youth who were tracked for four years. The researchers examined three factors: not having a high school diploma or GED, having children, or having an arrest record. Results of the study indicated that high school dropouts worked less than high school graduates. Specifically, high school dropouts were less likely to gain stable employment. While the authors acknowledged that their sample was not

representative of the general population and may have consisted of youth who were motivated to gain employment, their findings still suggested that educational attainment was connected to employment outcomes. Similar results also were found in more representative samples. Yates (2005) examined a nationally representative sample of youth. She examined youth's educational attainment and employment. Specifically, she examined whether youth had dropped out of high school, graduated high school, attended some college, or completed college. In addition, she examined the duration of employment experiences. Results of the study indicated that educational attainment was related to the length of time at a job where youth with more education hold jobs longer (Yates, 2005). In addition, Yates (2005) found that high school dropouts were least likely to have had a stable employment relationship lasting more than two years even though these adolescents had spent the longest time in the workforce.

Grades in school also were found to be important for employment outcomes. Linnehan (1996) examined a group of 354 adolescents in a school-to-work transition program to determine the variables related to job performance and work attendance. The researchers found that grades in school were related to work attendance as well as performance. In another study, Pinquart and colleagues (2003) examined a sample of 391 adolescents in Germany to examine how various factors at age 12 – 15 would influence employment outcomes at age 21. They found that among other variables, school grades were predictive of employment as well as job satisfaction at age 21. They suggested that the relationship between these variables was mediated by job search motivation and application stress. In other words, high school grades in early adolescence led to more motivation to find employment and greater confidence in applying for jobs. Similar

results were obtained by Jimerson (1999) who found a relationship between grade retention and low employment competence ratings are age 20.

Further, Wiesner and colleagues (2003) examined a group of 202 men who had been tracked longitudinally and found that educational attainment in adolescence was one of the strongest predictors of career path. Specifically, youth who had a high level of educational attainment were more likely to be employed for a longer period of time than those with a low level of educational attainment. While this sample did account for youth who had attended college, it still spoke to the importance of educational attainment on employment outcomes. Likewise, other research found that education level was associated positively with job satisfaction (Verhofstadt, DeWitte, & Omey, 2007).

Summary. Personality, depression, substance use, and adolescent educational attainment all operate at the individual level of the ecological model. These four constructs represent personality characteristics that may be connected to job attainment, stability, and quality as well as characteristics that may be useful in identifying youth who may have difficulty with the school-to-work transition. Research has shown that personality (Lounsbury et al., 2004; Lounsbury et al., 2005), depression (Maatta et al., 2002), substance use (Hartnagel, 1997), and adolescent educational attainment (Pinquart et al., 2003) were related to various employment outcomes. As a result, it was important to examine these constructs as potential predictors of a successful school-to-work transition. The next section outlines predictor variables at the microsystem level of the ecological model.

Microsystem Level Variables

Parent-adolescent relationship. Researchers suggested that having networks of family and friends can assist with the natural difficulties that may arise in the school-to-work transition and that disconnection often was associated with a lack of support (Wald & Martinez, 2003). Specifically, numerous studies concluded that parents matter for a successful school-to-work transition (e.g., Blustein et al., 1997; Hair, 2005; Lindstrom, Doren, Metheny, Johnson, & Zane, 2007; Young et al., 2001). For example, youth whose parents attended parent-teacher association meetings and volunteered to help at a child's school or classroom were 11% less likely to become disconnected. Research also found that financial, emotional, or motivational support can improve a youth's chances for success in adulthood (Cook et al., 2002; Furdstenberg et al., 2005; Osgood et al., 2004; Settersten, 2005; Shoeni & Ross, 2005).

Lindstrom and colleagues (2007) examined the role of family in the career development process using a sample of youth with learning disabilities. They conducted in-depth interviews with 26 adolescents, 18 parents, and 15 school staff members to determine how family structure, family involvement in career exploration, family expectations, and family interactions influenced employment outcomes. They also examined the influence of socioeconomic status on employment outcomes. Results of the study indicated that while socioeconomic status was related to employment outcomes, family process variables also were related to employment outcomes. Specifically, they found three patterns of family interactions. In one pattern, participants who reported positive family relationships and high levels of involvement and advocacy also reported having higher wage jobs and independent living situations. Participants in the second

pattern also reported positive family relationships and high involvement but limited support and advocacy. These participants had low career aspirations and had difficulty maintaining employment. Finally, participants in the third pattern reported varied family relationships, low involvement, and low support and advocacy. They also reported low career aspirations however surprisingly they reported being employed (Lindstrom et al., 2007). Although this study examined a narrow population and findings were somewhat unexpected, it still highlighted the importance of including the parent-youth relationship in the examination of school-to-work transitions.

Another study by Young and colleagues (2001) also examined how family factors influence the career development process. The researchers examined 20 parent-adolescent dyads over the course of six months. Parent-adolescent interactions during a career-based conversation were videotaped and coded at the beginning and end of the study. Results of the study indicated that adolescents do not engage in career development processes alone but they are jointly constructed with parents. Specifically, adolescents and parents co-construct career goals and activities (Young et al., 2001). These findings suggested that parents had influence over adolescents as they engage in a career development process and consequently may indirectly affect their transition to the workforce.

Other research has examined how parental factors can influence other adolescent outcomes. For instance, Wright and Cullen (2001) examined how parental support can influence delinquent behavior. They used a nationally representative sample of 1526 youth and examined two parental factors: parental reliability and parental support. In addition, the researchers examined delinquent behavior. Results of the study indicated

that adolescent delinquency was associated with high levels of child-parent attachment, household rules, and parental supervision. Likewise, adolescent delinquency was related to low levels of parent support.

Another construct that has been related to parental influence is psychological distress. Falci (2006) examined how family structure and closeness to parents can influence psychological distress in adolescence using a sample of 1,443 youth. She found that family structure was related to parent-adolescent closeness where adolescents in divorced families reported lower levels of closeness to parents. She also found that parent-adolescent closeness was related to low levels of psychological distress. While these outcomes were not directly associated with the school-to-work transition, they may influence youth development through their effects on individual level variables.

Fortunately, research has found that parents also can improve the resilience of adolescents (Ungar, 2004). Ungar (2004) examined 43 high-risk adolescents using a qualitative framework to determine how parents were related to level of resilience in adolescents. Using structured interviews and a grounded theory analysis, the researchers interviewed adolescents and their caregivers. Results of the study indicated that any contact with caregivers was related to increased resilience. Interestingly, the researchers found that adolescents preferred even poor parenting to no parenting. This suggested that any interaction between parents and adolescents may have desirable consequences on adolescent well-being.

Employment in adolescence. Employment during adolescence can have benefits for the school-to-work transition as well as other related outcomes. Specifically, researchers suggested that work and volunteer experiences in adolescence may lead to a

successful school-to-work transition (Smith & Rojewski, 1993). For example, Mortimer and Staff (2004) examined a sample of 1000 adolescents who were surveyed throughout high school and at three- and four- years after high school. The researchers examined work conditions for high school employment experiences as well as mental heath and adult work characteristics. Results of the study indicated that work conditions during high school employment were related to mental health. Additionally, the researchers found that work during high school had small but significant impacts on adult employment experiences. Specifically, work stressors in adolescence were related to lower self-efficacy four years after high school (Mortimer & Staff, 2004).

Alon, Donahoe, and Tienda (2001) examined the influence of employment during adolescence using a sample of 1,386 women who were followed over time. The researchers were interested in how the amount, timing, and volatility of adolescent work experiences would influence labor force attachment upon transition to adulthood. Results of the study indicated that the amount of work experience in adolescence was related positively to labor force attachment. Likewise work experiences closer to the transition to adulthood had a greater influence on labor force attachments than earlier work experiences (Alon et al., 2001). These findings suggested that adolescent work experiences have an influence on how youth view the school-to-work transition.

Work during adolescence also has been connected to educational attainment which, as previously discussed, is important for the school-to-work transition. Research found that adolescents who never worked in adolescence are more disadvantaged than their working peers (Leventhal et al., 2001). Leventhal and colleagues (2001) examined a sample of African-American adolescents. The researchers examined adolescent

employment experiences at ages 16 to 17 and how they influenced adult employment at ages 19 – 20 and then again at age 28 – 29. The researches also accounted for various background factors such as family circumstances, school experiences, and problem behaviors. Results of the study indicated that adolescent employment was not related to employment at ages 19 – 20 or ages 28 -29. However, they did find that employment in adolescence was related to educational attainment. Specifically, they found that adolescents who had employment experiences were more likely to complete high school and attend college (Leventhal et al., 2001). Thus, this study suggested that employment in adolescence may indirectly influence employment outcomes through its effects on educational attainment. Other research found similar results with employment in adolescence being correlated positively with educational attainment (Sum et al., 2000). Staff and Mortimer (2007) examined a sample of 1,010 teenagers from a metropolitan area of Minnesota. The researchers were interested in how part-time work during adolescence would affect educational attainment. Results of the study found that steady and occasional work appears to have more beneficial effects for youth. The researchers also found that work during adolescence was related to work in college and obtain higher degrees.

It is important to note that some research has found that amount of employment during adolescence may be the key factor in its beneficial outcomes. Overall it appears that moderate amounts of youth employment seem to be beneficial for adolescents (U.S. Department of Labor, 2000). Weller and colleagues (2003) examined the role of weekly work intensity levels on adolescent functioning. They examined a sample of 3,083 high school students and found that that the number of hours worked was related negatively to

school performance and engagement. They also found that weekly work intensity was related positively to health risk behaviors such as substance use (Weller et al., 2003). As with previous research, this study suggested that employment in adolescence may indirectly affect employment outcomes through its influence on individual level factors. Overall, researchers suggested that promoting employment in adolescence may help adolescents as they develop vocationally (Zimmer-Gembeck & Mortimer, 2006) and previous research supported this recommendation.

Summary. Parent-adolescent relationship and employment in adolescence are two microsystem level variables that have been shown to be important for the transition to adulthood. While both variables have been connected to employment outcomes, they also have been connected to individual level factors that, as previously discussed, influence the school-to-work transition. This suggested that there may be direct as well as indirect effects of micro level variables on the school-to-work transition. As a result, it was important to account for these variables. The next section addresses slightly more distal variables which function at the mesosystem of the ecological model. Specifically, the literature on parent education level and poverty status is reviewed.

Mesosystem Level Variables

Parent education level. Limited research has examined the effect of parent education level on the school-to-work transition. Hair and colleagues (2007) studied various factors that were related to youth becoming disconnected. The researchers examined a sample of 8,984 youth from a nationally representative sample. The predictor variables in their study included participation in an intervention program, community characteristics, youth characteristics, family processes, and background factors (including

parent education level). With regard to parent education level, the researchers found that parent education level was associated negatively with becoming disconnected. Compared to youth whose parents had at least a college degree, youth whose parents had some college education were 66% more likely to become disconnected. Moreover, youth whose parents had a high school diploma or GED were approximately one and a quarter times more likely to become disconnected and youth whose parents had less than a high school education were approximately one and a half times more likely to become disconnected. Drawing from two samples of youth, MaCurdy and colleagues (2006) found similar results. Finally, Arends-Kuenning and Duryea (2006) examined a sample of Hispanic youth and found that parent education level was related positively to adolescents' school attendance, attainment, and work participation.

Poverty status. It has been suggested that difficulties in school-to-work transition most aversely affect those at economic disadvantage (Worthington & Juntunen, 1997). In addition, individuals from higher socioeconomic statuses report a greater interest in work, greater access to external resources, and greater levels of career adaptability (Blustein et al., 2002). Indeed, socioeconomic status has been related to a perception of fewer future job opportunities (Weinger, 1998). As previously discussed, Lindstrom and colleagues (2007) found that socioeconomic status was related to employment outcomes.

Several studies have demonstrated the link between poverty and employment outcomes. For example, Berzin and colleagues (2006) examined the relationship between childhood poverty and outcomes during the transition to adulthood. The researchers examined 1,090 children from a longitudinal study and looked at variables such as duration of public assistance a child's family received, family income, and parental work

history. Several variables during the transition to adulthood also were examined including public assistance use, high school dropout, college attendance, not being in school or working, and income. Results of the study indicated that childhood poverty status was associated with lower rates of college attendance and higher rates of high school dropout. The researchers also found that youth who experienced poverty as children were more likely to receive welfare during their transition to adulthood (Berzin et al., 2006).

In another study, Rojewski and Kim (2003) examined a nationally representative sample of 14,376 youth. The researchers examined socioeconomic status and its effects on adolescents' career paths and found that youth in the highest quartile of socioeconomic status were less likely to be work bound or unemployed whereas the opposite was true for those in the lowest quartile. They also found that high socioeconomic status was related to attending college which was associated subsequently with high occupational aspirations, and academic achievement (Rojewski & Kim, 2003). Results of this study indicated that poverty had a positive relationship with unemployment. Likewise, McLoyd (1998) found that the impact of poverty was related to negative child outcomes such that poverty experienced at a young age had more detrimental effects on child outcomes such as school completion.

In a third study, School, Parsons, and Sacker (2004) used a longitudinal dataset to determine how socioeconomic status in childhood was related to adult outcomes. The researchers found that socioeconomic status was related negatively to academic achievement and related positively to work adjustment in adulthood. The researchers concluded that economic disadvantage could have long-term consequences on work outcomes.

Finally, Wentling and Waight (2001) studied the barriers and factors that assist minority youth in a successful school-to-work transition. The researchers utilized structured interviews with directors of 21 school-to-work partnership programs. These programs were designed to assist youth in meeting the needs of minority youth during the school-to-work transition. The researchers found that poverty was the most frequently cited barrier to making a successful school-to-work transition. Taken together, these studies suggested that poverty status not only directly affected employment outcomes but also could have affected educational attainment which was demonstrated to relate to the school-to-work transition.

Summary. Overall, less research had been conducted on mesosystem level variables and their relation to the school-to-work transition. This was not surprising given that most research in counseling psychology tended to focus on the individual and microsystem levels of influence (Worthington & Juntunen, 1997). Nonetheless, the research reviewed here suggested that parent education level and poverty status may influence the school-to-work transition both directly and indirectly. The next section will discuss exosystem influences on the school-to-work transition which are the most distal predictor variables in the present study.

Exosystem Level Variables

Physical risk. Although less research has examined how physical risk affects the school-to-work transition, there were data to suggest that communities and neighborhoods matter for youth transitioning to the workforce. For instance, neighborhood characteristics have been connected to the type of school-to-work training an adolescent receives (Ainsworth & Roscigno, 2005). Likewise, Books-Gunn and

colleagues (1993) found that neighborhood characteristics were related to dropping out of school and Hartung and colleagues (2005) connected living in an urban environment to instability in career aspirations. In addition, researchers suggested that neighborhood conditions could influence a successful transition into adulthood (Imm, Kehres, Wandersman, & Chinman, 2006).

Neighborhoods also have been connected to mental health. For example, Wandersman and Nation (1998) discussed how a neighborhood with high levels of incivility such as dilapidated houses, abandoned buildings, litter, street harassment, and noisy neighbors were associated with undesirable outcomes such as anxiety, depression, crime, juvenile delinquency, and fear of crime. Furthermore, they found that these neighborhoods were associated with poor school performance and difficulty concentrating. Wandersman and Nation (1998) concluded that the effects of these "toxic" neighborhoods are far reaching and most seriously affect children.

In considering the influence of neighborhoods and communities, it must be noted that it was difficult to separate out the influence of neighborhoods and poverty. Consequently, many studies did not account for the convergent influence of neighborhood and poverty status. Nonetheless, studies examining neighborhoods provided valuable support for their importance in adolescent outcomes. One study by Holloway and Mulhern (2004) examined the effect of neighborhood poverty rates on adolescent employment. Using a nationally representative sample, they found that living in a neighborhood with a low poverty rate was associated with being employed or in the military after transitioning to adulthood. The researchers found that this result held true

even when controlling for family poverty status suggesting that simply being in proximity to poverty can have undesirable employment outcomes.

Adolescent educational achievement also was connected to neighborhoods (Ainsworth, 2002). Ainsworth (2002) examined various neighborhood characteristics and how they were related to educational outcomes. The results of the study suggested that living in a neighborhood where many residents held high status was related to high educational attainment. However, other characteristics like neighborhood residential stability, economic deprivation, and racial/ethnic diversity were not related to academic achievement. Finally, neighborhood characteristics were connected with child outcomes above and beyond the influences of family poverty (Brooks-Gunn et al., 1993). Brooks-Gunn and colleagues (1993) studied how various neighborhood characteristics were related to adolescent outcomes such as teenage childbearing and school-leaving. The researchers found that growing up in an affluent neighborhood was associated with lower levels of teen childbearing and dropping out of school. In summary, since some research demonstrated the influence of neighborhoods on employment outcomes, it was important that we accounted for them in the present investigation.

Counseling Implications of examining the school-to-work transition of non-college-bound youth

While developmental psychologists (Hair et al., 2003), demographers (American Youth Policy Forum, 1998), and sociologists (Rosenbaum, 2001) have taken a role in studying and intervening with non-college-bound youth as they make a transition into the workforce, counseling psychology has taken a smaller role with this population. This was

surprising given that counseling psychology historically has emphasized career development.

Consistent with the suggestions of researchers (e.g. Worthington & Juntunen, 1997), the present study advanced knowledge regarding what constitutes a successful school-to-work transition and what factors were related to this transition. By focusing on non-college-bound youth, this study provided valuable information about this important but often ignored population. Specifically, this study examined job attainment for non-college-bound youth making the school-to-work transition; both high school graduates as well as dropouts were included in this study. However, the present study also examined aspects of the school-to-work transition that were less examined by current research (e.g., employment stability, and job quality). Moreover, since this study utilized a nationally representative sample of youth, findings from this study could be generalizable to youth nationwide directly entering the workforce.

Through examining the school-to-work transition of non-college-bound youth, counseling psychologists could obtain the information necessary to better work with this population. Since counseling psychology emphasizes career development, counseling psychologists are uniquely qualified to address the school-to-work transition of non-college bound youth (Blustein et al., 1997; Fouad, 1997). Specifically, the results of the present study could allow counseling psychologists to further theory on the career development of adolescents. Further, by understanding the school-to-work transition of this group, counseling psychologists could identify youth at-risk for making an unsuccessful school-to-work transition and provide interventions for this group. Further, counseling psychologists could use the information from this study to promote a healthy

school-to-work transition with this group. This could include developing programs that could place an individual onto a trajectory for a successful school-to-work transition.

School-to-work interventions. Counseling psychologists already have begun work on developing interventions to assist individuals make the school-to-work transition. For example, Blustein (1999) called for school-to-work interventions to be tailored to the experiences of disadvantaged youth as well building interventions off of career development theories. Other research focused on developmentally appropriate interventions (Solberg et al., 2002). Specifically, it is important that counseling psychologists integrate developmental psychology into vocational development (Gelso & Fassinger, 1992; Solberg et al., 2002). Solberg and colleagues (2002) highlighted three foundation areas where counseling psychologists could play a role in the school-to-work transition; basic skill development, thinking skill development, and personal qualities. Further, they suggested that counseling psychologists should not only focus on these skills but also on impacting the environmental context of the youth in transition (Solberg et al., 2002). This suggestion was echoed by other researchers (Fouad, 1997). This context could include intervening with teachers, principles, employers, caregivers, or mentors. Indeed, several programs for non-college bound youth include intervention with these multiple agents in a youth's environment (Hair et al., 2003).

However, a limitation of the work counseling psychologists have engaged in is twofold. First, most research did not specifically focus on non-college bound youth. Second, it did not address factors related to a successful school-to-work transition and instead focused on job attainment. Therefore, more research was needed to inform effective interventions.

Research Questions/Hypotheses

The present study addressed the following research questions: "What were the predictors of job attainment, employment stability, and job quality for youth who were making the school-to-work transition?" Specifically, the present study identified variables in adolescence that predicted job attainment, stability, and quality among non-college bound youth. This study examined both youth who had completed high school as well as youth who had dropped out of high school.

With regard to job attainment, it was hypothesized that the independent variables would yield information about whether participants attained a job. Consistent with the research, it was hypothesized that high levels of agreeableness and conscientiousness, low levels of depression, lack of substance use, high educational achievement, a more positive parent-adolescent relationship, more employment in adolescence, higher parent education level, lower poverty status, and lower physical risk would correlate with the likelihood of being employed.

With regard to employment stability and job quality, it was hypothesized that the independent variables gathered in 1997 through 2005 would predict employment stability and job quality in 2005. In particular, high levels of agreeableness and conscientiousness, low levels of depression, lack of substance use, high educational achievement, a positive parent-adolescent relationship, employment in adolescence, high parent education level, low poverty status, and low physical risk would contribute to high stability of employment and high job quality.

Consistent with previous research and theory, it was hypothesized that individual level variables would have the greatest influence on the school-to-work transition of non-

college bound youth. In other words, the relationship between the predictor and the outcome variables would be stronger with proximal variables (e.g., individual level and microsystem variables) and weaker with distal variables (i.e., mesosystem and exosystem variables) (see Figure 1).

Chapter III: Method

Design

The present study examined the school-to-work transition of non-college bound youth. Specifically, this study investigated the predictors of job attainment, stability, and quality for a nationally representative sample of youth followed longitudinally. Since many factors may influence the job attainment, stability, and quality of non-college bound youth, an ecological framework (Bronfenbrenner, 1986) was utilized to examine individual, micro-, meso-, and exosystem factors in a youth's adolescence that affect these outcomes. Thus, the model included proximal as well as distal predictor variables (see Figure 1). To provide support for the hypothesized latent variables in the present study, two factor analyses were conducted. The first factor analysis was used to study potential latent variables among the independent variables and the second factor analysis was used to investigate the presence of latent variables among the dependent variables.

Since job attainment in the present study was a dichotomous variable, a logistic regression within a latent variable framework was used to examine the relationship of the independent variables on employment status. To study the relative relationship between the independent variables and the latent and observed dependent variables (i.e., stability of employment and job quality) simultaneously, structural equation modeling was utilized using the sample of participants who were employed in 2005.

The independent variables from proximal to distal included personality, depression, adolescent substance use, and adolescent education level as individual level variables. Microsystem variables included parent-adolescent relationship and employment in adolescence. The mesosystem variables were parent education level and

poverty status. Finally, physical risk represented the exosystem. In both the logistic analyses as well as the structural equation model, independent variables were gathered in 1997 through 2005 (Rounds 1 through 9) and dependent variables were gathered in 2005 (Round 9).

Data Source

The data source for the present study was the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97). The NLSY97 is a nationally representative sample of 8,984 adolescents who were ages 12-16 in 1997 (with oversamples of African--American and Hispanic youth). The survey is sponsored by the Bureau of Labor Statistics, U.S. Department of Labor and the National Institute of Child Health and Development. The NLSY97 investigated the transition from adolescence to adulthood. These adolescents were followed over time and data were gathered annually on a variety of topics including labor force outcomes, schooling, employment, and family relationships. Currently, data were available for the first nine years of data collection (i.e., 1997-2005, Rounds 1-9). The present study utilized data from various rounds of data collection to capture the hypothesized predictors of job attainment, stability, and quality (see Table 1).

Participants in the NLSY97 were compensated for their participation between $10 and $20 each year. The variability in compensation was due to an effort to examine the effects of compensation on survey participation. Data from youth in the NLSY97 were collected annually in-person using a computer-assisted personal-interview. Computer software guided interviewers through an electronic questionnaire. The software was designed to prevent interviewers from entering invalid data and alerted interviewers to implausible answers. Further, checks were built into the software to minimize

Table 1.

Timeframe for Collection of Independent Variables

Variable	Measure Description	Round	Year	# of Items
	Individual			
Personality	Abbreviated Five Factor Inventory: Agreeableness Subscale	R6	2002	4
Personality	Abbreviated Five Factor Inventory: Conscientiousness Subscale	R6	2002	4
Depression	Abbreviated Center for Epidemiologic Studies Depression Scale	R4, 6, 8	2000, 2002, 2004	5
Substance Use	Substance Use Index Summary Score	R1-4	1997-2000	3
Substance Use	Average # of days used cigarettes in the last 30 days	R1-9	1997-2005	1
Substance Use	Average # of days used alcohol in the last 30 days	R1-9	1997-2005	1
Substance Use	Average # of days used marijuana in the last 30 days	R1-9	1997-2005	1
Adolescent Educational Achievement	Highest grade completed	R9	2005	1
	Microsystem			
Parent-Adolescent Relationship	Highest Relationship with a parent	R1	1997	1
Employment in Adolescence	Average hours worked per week from ages 14-19	R9	2005	1
Employment in Adolescence	Cumulative Number of Hours Worked ages 14-19	R9	2005	1
	Mesosystem			
Parent Education Level	Highest grade achieved by a parent	R9	2005	1
Poverty Status	Income to Poverty Ratio	R1	1997	1
	Exosystem			
Physical Risk	Physical Risk Index	R1	1997	5

inconsistent data during the interview and over time. With sensitive questions, youth were interviewed using an audio computer-assisted self-interview. Youth were able to listen to questions via earphones and read the questionnaire on the screen. Interviewers made attempts to secure a private environment for all interviews so that the presence of another interview did not disrupt the interview. In cases where this was not possible, interviewers noted this in the data. While steps were taken to minimize response bias, it is important to note that response bias may still have occurred, particularly with regard to self-report on sensitive topics (e.g., substance use).

The NLSY97 retained 81.7% of respondents over the first 9 years of data collection (Center for Human Resource Research, 2007a). In 2005 (i.e., Round 9), data

were collected from 7,338 youth, leaving data uncollected from 1,646 individuals (Center for Human Resource Research, 2007a). Of these 1,646 individuals, data were not collected because respondents were deceased (n=59), respondents were not locatable (n=418), the respondent was too ill (n=5), the respondent was unavailable (n=92), they refused to be interviewed (n=999), or some other reason (n=73) (Center for Human Resource Research, 2007a). To date, no research has been conducted comparing those youth who dropped out of the NLSY97 and those who remained in the sample. However, with regard to race/ethnicity and gender, the youth who dropped out of the sample were comparable to the original sample.

Sample

For the present study, the sample was limited to youth who have left school but have not gone on to attend college (i.e., non-college bound youth). In the present study, the definition of non-college bound youth was based on a definition used by Yates (2005). Since it was important to include participants in the sample who dropped out as well as completed high school, participants in the NLSY97 were included if they were not enrolled in school (high school or college) for 12 months or longer. Thus, individuals who dropped out of high school and went to work full-time but within the 12-month period began taking night classes would continued to be viewed as 'in school' despite their work schedule, until they were no longer taking classes. Not being in school may be due to leaving school, graduating from high school, or not taking high school classes. Furthermore, those who had attained a college degree or had some college were excluded from the sample. In addition, the sample was limited to participants who were between the ages of 12 and 14 in 1997 as this was the sample of participants who completed the

measures assessing the variables of interest. Specifically, this sample of participants was asked about Physical Risk, Parent-Youth Relationship, depression, personality, and some substance abuse items whereas older participants were not. The sample of participants who met these criteria included 2,042 participants (see Table 2).

The mean age of the participants in 1997 (i.e., Round 1) was 13.14 years (SD = 0.79) ranging in age from 12 to 14 years old. More than half of the participants were men (54.95%) and the remaining were women (45.05%). In addition, fewer than half of the participants were White non-Hispanic (41.79%). Additionally, 31.63% of the participants were Black non-Hispanic, 23.88% were Hispanic, and 2.7% were another race (see Table 2).

In examining participant's employment status, 81.15% were employed in 2005 (i.e., Round 9). Participants were out-of-school on average for 4.45 years (SD = 1.91 years). Since leaving school, participants reported working an average of 1160 hours (SD = 771.81) annually since leaving school. This was equivalent to 22.31 hours per week. In addition, they reported holding an average of 8.27 jobs (SD = 0.67) since leaving school.

For the structural equation model, the sample was limited to those participants that were employed in 2005 (i.e., Round 9) which included 1,657 participants. This subsample was comparable to the full sample with regard to age, gender, race, and employment variables (see Table 2). In addition, this subsample was comparable to the full sample with regard to the predictor variables (see Table 2).

Table 2.
Descriptive statistics of study sample

	The non-college bound sample who were interviewed in 2005 (N=2042)		The non-college bound sample who were interviewed and employed in 2005 (N=1657)	
	Mean (SD)	Frequency (percentage)	Mean (SD)	Frequency (percentage)
Independent Variables				
Depression				
2000 CES-D Score	14.98 (3.04)		15.21 (2.69)	
2002 CES-D Score	14.95 (2.70)		15.07 (2.62)	
2004 CES-D Score	15.10 (2.73)		15.11 (2.96)	
Substance Use				
Substance Use Index Summary Score	1.04 (0.88)		1.07 (0.89)	
Average Cigarette Use in last 30 days	7.91 (9.14)		8.21 (9.30)	
Average Drinking in last 30 days	2.40 (2.85)		2.55 (2.96)	
Average Marijuana Use in last 30 days	2.16 (4.31)		2.34 (4.57)	
Adolescent Educational Achievement (Highest grade completed)	10.98 (1.41)		11.04 (1.38)	
Parent-Adolescent Relationship (Highest relationship in 1997)	25.28 (4.72)		25.43 (4.57)	
Employment in Adolescence				
Number of jobs from Age 14-19	3.92 (2.55)		4.20 (2.57)	
Average hours worked per week from age 14-19	30.56 (10.73)		31.08 (10.39)	
Parent educational achievement (Highest grade achieved of a parent	12.09 (2.76)		12.12 (2.76)	
Income to poverty ratio, 1997	1.73 (1.81)		1.76 (1.81)	
Physical Environment Risk Index Score	1.82 (1.50)		1.77 (1.47)	
Dependent Variables				
Average Annual Hours Worked Since Leaving School	1160 (778.81)		1333.11 (719.83)	
Annual Average number of Jobs Since Leaving School, Reverse Scored	8.27 (0.67)		8.23 (0.68)	
Hourly Pay of Most Recent Job in 2005	--		13.79 (78.66)	
Job Quality (for most recent job in 2005)				
Index of Fringe Benefits	--		1.82 (2.49)	
Number of Paid Vacation Days	--		3.17 (5.23)	
Number of Paid Sick Days	--		1.98 (12.01)	
Employed in 2005		1631 (80.90%)		1657 (100%)
Control Variables				
Age in 1997	13.14 (0.79)		13.14 (0.79)	
Gender				
male		1122 (54.95%)		944 (56.97%)
female		920 (45.05%)		713 (43.03%)
Race/ethnicity				
White, non-Hispanic		852 (41.79%)		725 (43.81%)
Black, non-Hispanic		645 (31.63%		482 (29.12%)
Hispanic		487 (23.88%)		404 (24.41%)
Other		55 (2.70%)		44 (2.66%)

Note. These data are from the National Longitudinal Survey of Youth 1997, consisting of young men and women who were aged 12–14 on December 31, 1996.

Independent Variables

Independent variables were gathered from Rounds 1 through 9 of the data (i.e., 1997 through 2005) and were organized according to an ecological model (Bronfenbrenner, 1986) (see Table 1 and Figure 1). Due to the nature of the NLSY97 dataset, not all variables were collected from youth in all rounds of data. Consequently, the present study utilized the maximum amount of data available. However, some variables only were available in certain rounds. This was due to variables being added or deleted over the 9 rounds of data collection. In addition, the present study utilized "created variables" in the NLSY97 dataset which were items provided in the NLSY97 dataset by the Bureau of Labor Statistics. These "created variables" aggregated data across items and years of data collection to yield summary items. The NLSY97 codebook supplement describes these items as "either commonly used items that are derived from a number of different NLSY97 survey questions or longitudinal items that require updating in each round. If they were not provided, creating either the longitudinal or the cross-sectional variables might present difficulties for some NLSY97 users (Center for Human Resource Research, 2007b)."

In creating independent and dependent variables, it was hypothesized that certain items and measures would be used to operationalize constructs. While these constructs were theoretically informed, collinearity diagnostics were conducted on measures in the NLSY97 to provide further support for creation of the independent and dependent variables. Collinearity diagnostics were used to determine whether multicollinearity existed among the study measures and provided guidance for creating variables in the study (i.e., combining, recoding, or deleting items and measures from constructs).

Collinearity diagnostics are considered appropriate for reducing redundant information in variables (Tabachnik & Fidell, 1996). In the present study, collinearity diagnostics, variance inflation, and proportion of variation were examined to guide variable creation. The following descriptions describe how variables were defined after collinearity diagnostics were completed (see Appendix A). Since variable creation included creating scales and indices from measures, missing data at the index and scale level were handled by examining the amount of missing data in a scale or index. For cases where 75% or more of data were present, missing values were imputed by applying the average value of the non-missing variables in the scale or index to the missing value. For cases where less than 75% of the values within the scale or index were present, the scale or index was coded as missing.

Personality. Personality consisted of a latent construct consisting of two subscales of an abbreviated version of the Five Factor Inventory (FFI) (Goldberg, 1992; John & Srivastava, 1999). This variable was collected in Round 6 of the NLSY; unfortunately, these items were not collected in any other round of data. This version of the Five Factor Inventory consisted of 8 items measuring agreeableness and conscientiousness. The items asked respondents to indicate on a 1 to 5 scale the degrees to which they are organized vs. disorganized, not conscientious vs. conscientious, dependable vs. undependable, careless vs. thorough, quarrelsome vs. agreeable, cooperative vs. difficult, flexible vs. stubborn, and distrustful vs. trustful. The four items assessing agreeableness were summed to yield a total score and the four items assessing conscientiousness will be summed to yield a total score. To handle missing data on these questions, the amount of missing data were examined for each individual. For individuals where three of the items

in the agreeableness or conscientiousness scale were present, the missing value was imputed by applying the average value of the non-missing variables in the agreeableness or conscientiousness scale to the missing value. For individuals where less than three of the values within the agreeableness or conscientiousness scale were present, the scale for that individual was coded as missing. This particular abbreviated version of the Five Factor Inventory was used in previous research and the subscales were found to have limited reliability (agreeableness $\alpha = 0.58$; conscientiousness $\alpha = 0.43$) (Hair et al., 2006). In the present study, the measures of personality were found to have comparable reliability (agreeableness $\alpha = 0.56$; conscientiousness $\alpha = 0.38$) (see Table 3). However, due to this low reliability, personality variables were eliminated from the analyses.

Depression. Depression was assessed using an abbreviated version of the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) which was originally created for the Medical Outcomes Study (Stewart & Ware, 1992). The CES-D is a measure of current level of depression (Radloff, 1977). The instrument was designed to be used with a non-clinical population and on the full version, participants were asked to rate how frequently they have experienced each of twenty events in the past week. The instrument was scored on a 4-point scale from "rarely or none of the time" to "most of the time." Four of the 20 items on the full CES-D were reverse scored and scores for each item were summed to yield a total score between 0 and 60 with higher numbers indicating higher levels of depression. The CES-D had no subscales. The full CES-D was shown to be a reliable measure for assessing depressive symptoms with a variety of populations (e.g., Knight, Williams, McGee, & Olaman, 1997; Radloff, 1977; Roberts, Vernon, & Rhoades, 1989). The internal consistency reliability of the CES-D ranged

Table 3.

Internal Consistency Estimates, Actual Ranges, Possible Ranges, and Proportion of Missing Data of Measured Variables

	Actual Range	Possible Range	Alpha	% of Missing Data
Independent Variables				
Personality				
Conscientiousness	4 - 20	4 - 20	0.38	5.73%
Agreeableness	4 - 20	4 - 20	0.56	5.73%
Depression				
2000 CES-D Score	5 - 20	5 - 20	0.75	6.02%
2002 CES-D Score	5 - 20	5 - 20	0.75	5.63%
2004 CES-D Score	5 - 20	5 - 20	0.69	8.08%
Substance Use				
Substance Use Index Summary Score	0 - 3	0 - 3	0.81	4.31%
Average Cigarette Use in last 30 days	0 - 30	0 - 30	0.91	5.97%
Average Drinking in last 30 days	0 - 20	0 - 30	0.74	6.95%
Average Marijuana Use in last 30 days	0 - 25.33	0 - 30	0.83	6.51%
Adolescent Educational Achievement (Highest grade completed)	6 - 12	1 - 12	-	1.91%
Parent-Adolescent Relationship (Highest relationship in 1997)	8 - 32	8 - 32	-	1.71%
Employment in Adolescence				
Number of jobs from Age 14-19	0 - 17	0 - 20	-	0.05%
Average hours worked per week from age 14-19	0 - 106.33	0 - 168	-	5.78%
Parent educational achievement (Highest grade achieved of a parent)	1 - 20	0 - 20	-	8.03%
Income to poverty ratio, 1997	0 - 7	0 - 16.27	-	14.54%
Physical Environment Risk Index Score	0 - 7	0 - 7	-	11.56%
Dependent Variables				
Employed in 2005	0 or 1	0 or 1	-	1.27%
Average Annual Hours Worked Since Leaving School	0 - 5367	0 - 6440	-	5.44%
Annual Average number of Jobs Since Leaving School, Reverse Scored	2 - 9	1 - 10	-	9.99%
Hourly Pay of Most Recent Job in 2005	0 - 2423	0 - 3000	-	2.79%
Job Quality (for most recent job in 2005)			-	
Index of Fringe Benefits	0 - 10	0 - 10		0.00%
Number of Paid Vacation Days	0 - 45	0 - 45	-	3.43%
Number of Paid Sick Days	0 - 365	0 - 365	-	6.27%

from α = .85 to .90 across various studies (Radloff, 1977). Furthermore, Radloff (1977) reported support for the concurrent validity and construct validity of the full CES-D. The CES-D had been shown to relate to the Symptom Checklist-90 (SCL-90, Derogatis, Lipman, & Covi, 1973), another measure of depression (Radloff, 1977).

The CES-D has been abbreviated various ways and 19-item (e.g., Perreira, Deeb-Sossa, Harris, & Bollen, 2005), 12-item (e.g., Hair, Zaslow, & Ahluwalia, 2000; Weinfield, Ogawa, & Egeland, 2002), 11-item (e.g., Carpenter et al., 1998; Chang et al., 2001; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993; Suthers, Gatz, & Fiske, 2004), 10-item (e.g., Cheng & Chan, 2005; Cheng, Chan, & Fung, 2006; Cole, Rabin, Smith, & Kaufman, 2004; Grzywacz, Hovey, Seligman, Arcury, & Quandt, 2006; Kohout et al., 1993), 9-item (e.g., Martens et al., 2006; Santor & Coyne, 1997), and 5-item (e.g., Falci, 2006; Perreira et al., 2005) versions have been used in the literature. The CES-D used in the present study was comprised of five items gathered in 2002 asking respondents to indicate from 1 (all of the time) to 4 (none of the time) how much during the past month they felt they have been very nervous, calm and peaceful, downhearted and blue, a happy person, and so down in the dumps that nothing could cheer them up. The first, third, and fifth items were reverse scored and scores were summed to yield a total score where higher numbers indicated higher levels of depression. To handle missing data on the items in the CES-D, the amount of missing data were examined for each individual. For individuals where four of the items on the CES-D were present, the missing value was imputed by applying the average value of the non-missing variables in the CES-D to the missing value. For individuals where less than four of the values were

present, the scale for that individual was coded as missing. Thus, possible scores on the CES-D used in the present study ranged from 5 to 20.

This abbreviated version of the CES-D had been used in previous research (Hair et al., 2006) and data for this variable were collected in Round 6 of the NLSY. Support for the reliability of this version of the CES-D was found ($\alpha = 0.82$) (Hair et al., 2006). The reliability of the CES-D in the present study ranged from $\alpha = 0.69$ to 0.75 (see Table 3). For this study, CES-D scores from 2000, 2002, and 2004 (i.e., Rounds 4, 6, and 8) were included in a latent construct of depression (see Figure 1). A confirmatory factor analysis of the independent variables confirmed that these three CES-D scores were part of the same factor (see Table 4). All three years of data were included in the present study because the average onset of major depressive disorder is in the mid-twenties (American Psychiatric Association, 1993). These rounds of data captured participants who range in age from 15 through 21, thus allowing us to capture potential initial symptoms that may be evident of a clinical diagnosis of depression. This timeframe is of particular importance since depression prevalence increases threefold between preadolescence and adolescence (Weisz, Sandler, Durlak, & Anton, 2005).

Substance Use. Substance use was a latent construct consisting of four measures: an existing index of substance use (i.e., The Substance Use Index-Youth Report) and three individual items (see Figure 1).

The Substance Use Index-Youth Report (Child Trends & Center for Human Resources Research, 1999) was based on three youth-reported dichotomous items asking the adolescent whether they had ever smoked a cigarette, had a drink of an alcoholic beverage, and used marijuana. Scores were summed for each of these three items to yield

Table 4.

Factor analysis determining latent factors for study variables

Item	Factor Loading
Factor Analysis 1. Independent Variables Retained for Latent Variables	
Factor 1. Depression	
Depression CESD, 2000	0.60
Depression CESD, 2002	0.72
Depression CESD, 2004	0.63
Factor 2. Substance Use	
Substance use Index, Summary Scale, 1997-2000	0.88
Average Alcohol Use in Last 30 days, 1997-2005	0.60
Average Cigarette Use in Last 30 days, 1997-2005	0.70
Average Marijuana Use in Last 30 days, 1997-2005	0.60
Factor Analysis 2. Dependent Variables Retained for Latent Variables	
Factor 1. Job Quality	
Index of fringe benefits, most recent job	0.77
Number of paid vacation days, most recent job	0.76
Number of paid sick days, most recent job	0.81

Note. Only factor loadings on latent variables are presented.

a score from 0 to 3. For cases where any of these items were missing, the index was coded as missing. The Substance Use Index-Youth report was used in previous research to assess substance use (Mandara & Murray, 2006; Paternoster et al., 2003). While it is not typical to calculate an alpha for an index score, Mandara and Murray (2006) calculated the alpha of the Substance Use Index-Youth Report to be $\alpha = 0.74$. Data for this index were available for 1997, 1998, 1999, and 2000. In 1997, youth were asked about having ever used substances, whereas in other years adolescents were asked about their substance use in the previous year. To maximize the use of available data, the adolescents' score for the Substance Use Index from each year were averaged to create a Substance Use Index Summary Score which provides information about substance use across multiple years. To handle missing data on the items in the Substance Use Index Summary Score, the amount of missing data were examined for each individual. For individuals where three of the four years of data were present, the missing value was imputed by applying the average value of the non-missing years to the missing value. For individuals where less than three years of data were present, the scale for that individual was coded as missing. This summary score was included as one indicator of the latent variable of substance use. The reliability of the Substance Use Index Summary Score was found to be $\alpha = 0.81$ in the present study.

In addition to the Substance Use Index, three questions taken from the NLSY97 were included in the substance use latent variable. These three questions asked adolescents to indicate during the last 30 days, how many days they smoked a cigarette, had one or more drinks of an alcoholic beverage, or used marijuana. These questions were asked only from respondents who indicated in a previous question that they had

engaged in these substance use behaviors. Participants who indicated that they had not engaged in these substance behaviors in the previous year were coded as not having used these substances in the last 30 days. These three questions assessing substance use in the previous 30 days were used in previous research to measure substance use (Amuendo-Dorantes, Mach, & Clapp, 2004). Data were available for these questions from 1997 through 2004. Adolescents' responses from each year from 1997 through 2004 were combined by averaging scores from multiple years to create three measures assessing average cigarette use, drinking, and marijuana use in the past 30 days. To handle missing data for these three measures, the amount of missing data were examined for each individual. For individuals where eight or nine years of data were present, the missing value was imputed by applying the average value of the non-missing variables to the missing values. For individuals where less than eight years of data were present, the scale for that individual was coded as missing. These three items were shown to have reliability estimates ranging from $\alpha = 0.74$ to 0.91 (see Table 3). In addition, a factor analysis of the independent variables revealed that all substance use variables were part of the same factor (see Table 4).

The substance use variables used in the study were gathered in various different years (i.e., 1997 through 2004) that reflect adolescents substance use behavior from ages 12 through 21. This age range is of particular importance since previous research has indicated that substance use in adolescence leads to continued substance use later in life (Martin & Milot, 2007).

Adolescent educational achievement. Adolescent educational achievement was measured with a single item assessing the highest grade of school completed as of 2005 (Round 9).

Parent-adolescent relationship. Parent-youth relationship was assessed using an established measure: The Parent-Youth Relationship-Youth Report (Child Trends & Center for Human Resources Research, 1999). This measure consisted of items originally developed for the IOWA Youth and Family Project (Conger & Elder, 1994). For the residential mother and father, this measure consisted of eight items. The first three items asked adolescents to indicate from 1 (strongly disagree) to 4 (strongly agree) how much they agree with statements that they think highly of their parent, that their parent is a person they want to be like, and that they enjoy spending time with their parent. The last 5 questions asked adolescents to indicate from 1 (never) to 4 (always) how often their parent praises them for doing well, criticizes them or their ideas, helps them with things that are important, blames them for their problems, and makes plans and cancels them for no good reason. The second, fourth, and fifth items were reverse scored so higher numbers on all items indicate a better parent-adolescent relationship. For each target parent (i.e., residential mother, residential father, non-residential mother, non-residential father), adolescents scores were summed to yield a total score ranging from 8 to 32 with higher scores indicating a better parent-adolescent relationship. To handle missing data on the items in this measure, the amount of missing data on these eight questions were examined for each individual. For individuals where six or seven of the eight items on the measure were present, the missing values were imputed by applying the average value of the non-missing variables on the measure to the missing value. For individuals where less

than six of the eight values were present, the scale for that individual was coded as missing. For participants who did not have residential or non-residential parents, scores were coded as missing for those parents. After scores were created for each target parent, data on the mother and fathers were examined and it was determined that missing data precluded the use of these four variables separately. Thus, an item was created that reflected the highest score of parent-youth relationship the adolescent reported with a parent (i.e., the highest of the four scores). This allowed for the assessment of whether the participant had any positive relationships with parental figures. Previous research has found the reliability of this scale to range from α=.74 to .82 (Hair et al., 2005). Additionally, the predictive ability of the parent-youth relationship scale has been demonstrated (Hair et al., 2005). Complete data in the NLSY97 were available for 1997 (Round 1). In 1997, youth in the study were ages 12 to 14 and this timeframe is a crucial for parent-youth relationships as ages 12 to 15 has been identified as a vulnerable time for youth (Search Institute, 1990). Further, researchers have suggested that this is a crucial time for parents to assist children deal with many negative outside influences (Hawes, 1996).

Employment in adolescence. Employment in adolescence consisted of two "created variables" that assessed participants' activity at employee-type jobs. The NLSY97 defined employee-type jobs at jobs in which participants were working as an employee; in other words they had an ongoing employment relationship with an employer. This was differentiated from freelance jobs where participants did not have an ongoing employment relationship with an employer. Both indicators of employment in

adolescence were based on information as of 2005 (Round 9) of the NLSY97. This allowed for the use of the most accurate data available.

The first indicator was a "created variable" assessing the average number of hours per week an adolescent worked at an employee-type job from age 14 through 19. The second indicator was a "created variable" assessing the total number of employee-type jobs held from age 14 through 19. These two indicators were used by other researchers (Pabilonia, 2001). Since these two items had different metrics, they were retained as two indicators of employment in adolescence rather than as a latent variable. In addition, an examination of the measurement model in the present study confirmed that these two items should be kept separate.

Parent education level. Parent education level consisted of a single item gathered in Round 1 (1997). This item indicated the highest grade of school completed by respondent's residential father or residential mother. In other words, the item assessed the highest grade achieved of a residential parent. Data in the NLSY97 allowed for the delineation of highest parent education level from "no education" through "8 years of college or more." A high score on this item indicated high levels of education. An examination of data on this item determined that missing data precluded the use of these variables separately (i.e., using the educational attainment of residential mothers and residential fathers separately). Thus, an item was created that reflected the highest grade completed by a parent (i.e., the higher of the two scores).

Poverty status. Poverty status was assessed by a "created variable" indicating for the ratio of household income to poverty level in the previous year, taking into account household size. This method of assessing poverty status was used by the Census Bureau

to report poverty status, and research has used this measure previously (Hair et al., 2006; Hill & Michael, 2001).

Since previous research suggested that early poverty status may be more influential than recent poverty status (McLoyd, 1998), and because family poverty status may be less influential for youth who have moved out of the home (Ryan, Fauth, & Brooks-Gunn, 2005), income to poverty ratio from 1997 (Round 1) was used to assess poverty status.

Physical Risk. Physical risk was assessed with an established five-item measure of neighborhood risk; The Physical Environment Risk Index (Child Trends & Center for Human Resources Research, 1999). Questions on this index asked the adolescent to report on two environmental characteristics and interviewers to report on three aspects of the home/neighborhood. Adolescents were asked whether their home had electricity and heat when it was needed in the past month; respondents who indicated that they did not were assigned a point. Adolescents also were asked how many days they heard gunshots in their neighborhood in a typical week; respondents indicating 1 or more days were assigned a point. Interviewers were asked to report on how well kept were most of the buildings on the street where the youth lived; this question was coded from 0 (well kept) to 2 (poorly kept). Interviewers also were asked to rate how well kept the interior of the youth's home was and scores were coded from 0 (well kept) to 2 (poorly kept). Finally, interviewers were asked to indicate whether they felt concern for their safety when going to conduct the interview (yes= 1, no =0). Data for this index were gathered in 1997 (Round 1) and scores on each of the items were summed to create a composite score ranging from 0 to 7 where high scores indicate a high risk physical environment. To

handle missing data on these questions, the amount of missing data on these five items were examined for each individual. For individuals where four of the items on the physical risk index were present, the missing value was imputed by applying the average value of the non-missing variables to the missing value. For individuals where less than four of the values were present, the index for that individual was coded as missing. The Physical Environment Risk Index in the NLSY97 was used in research previously (e.g., Manlove, Terry-Humen, Ikramullah, & Moore, 2006; Willetts & Maroules, 2004). In addition, physical environment risk assessed in 1997 was utilized because previous research has determined that neighborhoods can have an influence development (Shonkoff & Phillips, 2000). This age range is of particular importance since "adolescents typically spend a good deal of time away from their homes" (Shonkoff & Phillips, 2000, p.331).

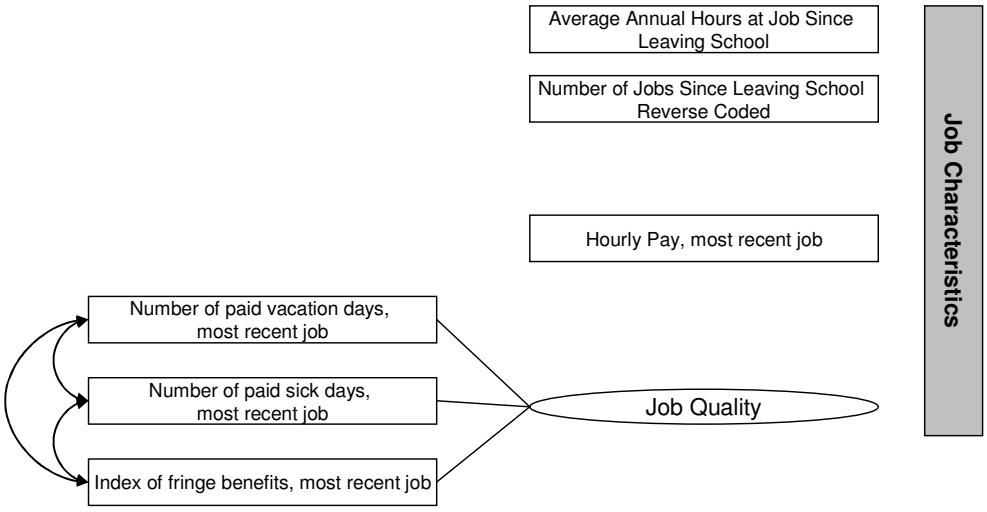
Dependent Variables

Dependent variables were gathered in 2005 (Round 9). Respondents in the NLSY97 ranged in age from 20 through 26 with a majority of respondents' ages 21 through 25 in 2005. Since the present study was limited in age range, participants in the present study ranged from 20 through 22 in 2005.

Job Attainment. Job attainment was measured using a single dichotomous variable. Data were available on employment status for each week in Round 9 (2005). Participants were classified as having attained employment if they worked any of the weeks of the year in 2005 (Round 9). Participants who had not worked any of the weeks of the year in 2005 were classified as not having attained employment.

Employment Stability. Job stability consisted of two indicators (see Figure 2). The first indicator was the average annual length of employment in weeks since leaving school. This indicator included all jobs held and was calculated by determining when the respondent left school and calculating the total length of employment from that year to 2005 (Round 9). This number was then divided by the number of years since the respondent left school to yield the average annual length employment. Employment for this variable was reported in weeks. Long lengths of employment (i.e., a high number of average annual weeks worked) indicated job stability. This method of determining job stability was used in previous research (Yates, 2005). An average annual length of employment was reported instead of total length of employment since participants left school at varying time points and consequently had been out of school for different lengths of time.

Figure 2. Organization of Dependent Variables in the Structural Equation Model



The second indicator was the average annual number of employee-type jobs held since the adolescent left school. The NLSY97 defined employee-type jobs at jobs in which participants were working as an employee; in other words they had an ongoing employment relationship with an employer. This is differentiated from freelance jobs where participants did not have an ongoing employment relationship with an employer. Similar to the previous indicator, this indicator was calculated by determining when the respondent left school and calculating the total number of jobs the respondent held during this time. The number of jobs a participant held since leaving school was divided by the number of years since the respondent left school to yield the average annual number of jobs a participant held since leaving school. For example, if a person held 15 jobs since leaving school and had been out of school for 3 years, their final score was a 5. In other words, this person had an average of 5 jobs a year since leaving school.

In addition, this indicator was transformed so high numbers indicated few jobs and also greater stability of employment over time. Specifically, the average annual number of jobs held since leaving school was subtracted from 10 as the possible range of this indicator was from 0 to 10 jobs. In other words, if a person held 2 jobs annually since leaving school, their score on this indicator was a 8 (i.e., 10-2). In the study sample, this indicator ranged from 2 (i.e., 8 jobs annually held since leaving school) to 9 (i.e., 1 job since leaving school), with high scores indicating strong levels of job stability.

While conceptually, the number of jobs held and length of employment were indicative of a single factor, because these two items had different metrics, they were kept as two indicators of employment stability rather than as a latent variable of

employment stability. This was confirmed in the measurement model of the structural equation model.

Job Quality. Job quality was measured with a latent construct consisting of three indicators describing the most recent job the respondent reported having in 2005 (Round 9) (see Figure 2). First, adolescents were asked to indicate how many (using a predetermined list of 10) fringe benefits were offered by their work setting. These fringe benefits included medical, surgical, or hospitalization insurance, life insurance, dental benefits, paid maternity or paternity leave, unpaid maternity or paternity leave, a retirement plan other than Social Security, a flexible work schedule, tuition reimbursement, company provided or subsidized child care, and employee stock ownership plans. Adolescents obtained a score of 0 to 10 representing the number of benefits received. High scores on this indicator indicated high job quality. To handle missing data on this index, the amount of missing data were examined for each individual. For individuals where eight or more of the items were present, the missing value was imputed by applying the average value of the non-missing variables to the missing value. For individuals where less than eight of the values were present, the index for that individual was coded as missing.

For the second indicator of the job quality latent variable, respondents were asked to indicate the number of paid vacation days they received each year. Finally the third indicator of the job quality latent variable asked respondents to indicate the number of paid sick days they were entitled to during the year. With both of these indicators, high scores indicated high job quality. An examination of the measurement model confirmed that these three indicators were part of the same latent construct (see Table 4).

In addition to the latent construct of job quality (which consisted of fringe benefits, the number of paid vacation days, and the number of paid sick days), job quality also was assessed with an observed variable measuring hourly pay. Respondents were asked to report on the hourly rate of pay for their most recent job. High scores indicated high job quality. This item was not included in the latent construct of job quality because, while it was theoretically related to job quality, an examination of the measurement model revealed that it did not load the same factor.

Control Variables

To control for the potentially confounding effect of demographic and socioeconomic influences as well as cohort effects, the model in the present study controlled for race-ethnicity, gender, and age.

Analysis

To guide the analyses in the study, the present study utilized a modified version of steps in structural equation modeling outlined and suggested by previous researchers (Tabachnik & Fidell, 1996; Weston & Gore, 2006). These steps included model specification and identification, model estimation, model fit and interpretation. Consistent with Weston and Gore's (2006) recommendation, the model in the present study was specified and identified a priori (see Figures 3 and 4). Model identification consisted of two steps: the measurement model and the structural model. The measurement model was tested with a confirmatory factor analysis that confirmed the indicators contributing to latent variables in the model; the structural model was tested to determine the significance of hypothesized relationships among the variables of interest (Tabachnik & Fidell, 1996; Weston & Gore, 2006). Finally, model fit and interpretation used several

established indicators of fit (Tabachnik & Fidell, 1996; Weston & Gore, 2006). Weston and Gore (2006) also suggested an additional step in the process of structural equation modeling (i.e., model modification), however since this study was exploratory in nature, this step was not included in these analyses. These modified steps were confirmed through discussion with a statistics expert (E. Hair, personal communication, July 2, 2008). The next section provides details about the steps followed in this study.

Exploratory Analysis. Several exploratory analyses were conducted to inform the main analysis. First, missing data patterns were examined. Second, descriptive statistics were calculated for the population of interest (i.e., the non-college bound sample of youth who were ages 12 – 14 in 1997). These statistics allowed for an analysis of the demographics of the population. Third, MANOVAs were run on the predictor variables to determine whether the independent variables differed across those that were and were not interviewed in 2005 (i.e., Round 9) as well as whether the variables differed based on participant demographics. Next, intercorrelations were calculated for all variables in the study and a correlation matrix was reported. Finally, the measurement model of the study was examined using a confirmatory factor analysis to provide support for the latent variables in the study.

Main Analysis. To examine the relationship of the independent variables with job attainment, a logistic regression within a latent variable framework was conducted with the full sample of non-college bound participants who were ages 12 to 14 in 1997 and were interviewed in 2005 (Round 9), as this sample completed the measures assessing the variables of interest. Only those that were interviewed in 2005 were included in the study because outcome variables were measured in 2005 and imputing dependent variables

from those that were not interviewed would have been inappropriate. This logistic regression allowed for determination of the probability of job attainment or non-attainment based on the variance explained by the independent variables (Tabachnik & Fidell, 1996). A logistic regression is an extension of the generalized linear model that allows for the explanation of dependent categorical variables using multiple categorical and continuous independent variables. In the present study, a logistic regression within a latent variable framework was appropriate because job attainment was defined as a dichotomous variable (i.e., whether the adolescent had obtained employment in 2005) with the independent variables predicting job attainment. The independent variables in the logistic regression included latent and observed variables which were entered simultaneously. The latent variables were depression, and substance use and the observed variables included adolescent educational achievement, parent-adolescent relationship, number of jobs held in adolescence, number of jobs held between ages 14 and 19, average number of hours per week worked between ages 14 and 19, highest education of a parent, income to poverty ratio, physical risk index, average annual hours at job since leaving school, number of jobs since leaving school reverse coded, and hourly pay.

Structural equation modeling (SEM) was used to examine the relationship between the independent variables and dependent variables (i.e., stability of employment and job quality). This analysis included only the participants who were employed in 2005 (Round 9) as those who were not employed in 2005 would not have had data on stability of employment or job quality. One model was estimated to allow for the comparison of relative levels of influence the independent variables have on the dependent variables.

Structural equation modeling is a confirmatory statistical method that allows for multiple latent independent variables each measured by multiple indicators as well as multiple latent dependent variables also each with multiple indicators (Tabachnik & Fidell, 1996). In the present study, depression, and substance use were latent independent variables measured by multiple items. Likewise, job quality was a latent variable with three indicators. All other variables in the present study were observed variables (i.e., adolescent educational achievement, parent-adolescent relationship, number of jobs held in adolescence, number of jobs held between ages 14 and 19, average number of hours per week worked between ages 14 and 19, highest education of a parent, income to poverty ratio, physical risk index, average annual hours at job since leaving school, number of jobs since leaving school reverse coded, and hourly pay). Structural equation model allowed for the testing of an overall model with multiple dependent variables rather than independently testing each dependent variable (Muthén & Muthén, 2007; Tabachnik & Fidell, 1996). Further, structural equation modeling also allowed for interpretation of the model despite multicollinearity among independent variables (Muthén & Muthén, 2007).

To evaluate the model fit of the structural equation model, the present study used the Root Mean Square Error of Approximation (RMSEA) where a value of less than 0.05 indicates an adequately fitting model. In addition, the present study also used the Comparative Fit Index (CFI) (Bentler, 1990), and the Tucker-Lewis Index (TLI) (also known as the Non-Normative Fit Index) (Tucker & Lewis, 1973). For both indices, values of 0.95 or higher reflected a good fit of the specified model (Hu & Bentler, 1999). In addition, a value between 0.90 and 0.95 indicated an adequate fit of the specified

model (Kenny & McCoach, 2003). All three of these are considered conventional indices of fit (McDonald & Ho, 2002). However, research has demonstrated that CFI and TLI tend to decrease as the number of variables in a model increases (Kenny & McCoach, 2003).

As previously stated, in both the logistic analyses as well as the structural equation model, independent variables were gathered in 1997 through 2005 (Rounds 1 through 9) and dependent variables were gathered in 2005 (Round 9). Dependent variables were gathered in 2005 as this allowed for the use of the most recent data available on the study participants. As a result, for all study participants, maximum data were available on participants' employment status and characteristics since leaving school. Consequently, using dependent variables gathered in 2005 provided the most information about stability of employment. Further, dependent variables gathered in 2005 allowed for the greatest likelihood of participants to find a stable job (Yates, 2005). A significance level of $p < 0.001$ was used in the present study.

Missing Data

Since the NLSY97 contains missing data, at the variable level, a full information maximum likelihood (FIML) procedure was used for cases with incomplete data within a statistical modeling program (Mplus). FIML is a theory based maximum likelihood method of accounting for missing that makes use of all available data points, even for cases with some missing responses (Enders, 2001). FIML does not impute missing values but rather provides likelihood estimates. FIML works by computing the likelihood for the observed portion of each case's data which is then accumulated and maximized. FIML has been demonstrated to be superior to other methods of accounting for missing data

including listwise deletion, pairwise deletion, and similar response pattern imputation (Enders & Bandalos, 2001).

At the index and scale level, missing data were handled by examining the amount of missing data in a scale or index. For cases where 75% or more of data were present, missing values were imputed by applying the average value of the non-missing variables in the scale or index to the missing value. For cases where less than 75% of the values within the scale or index were present, the scale or index was coded as missing.

Chapter IV: Results

This chapter describes and summarizes the results of the statistical analyses used to evaluate the research question and hypotheses posited in Chapter 2. This chapter first discusses the missing data patterns in the study. Next, the descriptive data for the study variables were described. Third, the findings from the preliminary analyses, conducted to study whether the independent variables differed across those that were and were not interviewed in 2005 (i.e., Round 9), will be described. Preliminary analyses also were conducted to assess whether the sample differed by race, gender, or age. Fourth, the intercorrelations of the study variables were reported. Fifth, a discussion of the factor analyses conducted to investigate latent variables was presented. Finally, the results of the logistic regression and the structural equation model were presented.

Missing data proportions

Missing data among the independent and dependent variables occurred in between 0 and 14.5% of the total data (see Table 3). With regard to the independent variables, the substance use index summary score (4.31%), adolescent educational attainment (1.91%), and parent-youth relationship (1.71%) measures had less than 5% of the data missing. In addition, there was more than 10% of the data missing on the physical environment risk (11.56%) and the income-to-poverty ratio (14.54%) measures. The other independent variables had between 5 and 10% of the data missing. With regard to the dependent variables, the greatest proportion of missing data were on the annual average number of jobs since leaving school measure (9.99%). The remaining dependent variables had lower proportions of missing data. Missing data did not appear to fall in a pattern, nor did missing data tend to cluster on a given measure. As a result, a full information maximum

likelihood (FIML) procedure was used in the logistic regression and structural equation model to account for missing data in the sample.

Descriptive statistics for study variables

To understand how participants in the study responded to the questions comprising the study variables, the mean, standard deviation, and range were calculated for each study variable (see Tables 2 and 3). In general, participants used the entire range of possible responses when responding to questions that comprise the study variables.

Independent Variables. For depression variables, participants reported relatively high levels of depressive symptoms with means ranging from 14.95 to 15.10 and standard deviations ranging between 2.70 and 3.04 across the three years of depression data available. Adjusting this score to compare to the full version of the Center for Epidemiologic Studies Depression Scale (CES-D) (M = 28.85 to 30.30), participants in this study reported depression levels that appeared to be comparable to the means found with clinical populations (M = 20.91 to 39.11, SD = 0.74 to 1.73).

Participants in this study reported relatively low levels of substance use. The means and standard deviations for the substance use items were as follows: M = 1.04, SD = 0.88 for the Substance Use Index Summary Score; M = 7.91, SD = 9.14 for Average Cigarette Use in the last 30 days; M = 2.40, SD = 2.85 for Average Drinking in the last 30 days; and M = 2.16, SD = 4.31 for Average Marijuana Use in the last 30 days. Overall, this sample reported relatively low substance use patterns.

The average highest grade completed in this sample was 10.98 years of schooling with a standard deviation of 1.41 years. In other words, participants on average reported finishing 10^{th} grade and part of 11^{th} grade. Consequently, this finding indicated that the

mean level of education a participant completed was less than a high school education. In total 1,119 participants in the study had completed high school compared with 884 participants who had not completed high school.

On microsystem level variables, participants reported moderately high scores on the measure of parent-youth relationship (M = 25.28, SD = 4.72). In other words, on average, participants thought highly of their parent, felt their parent was someone they wanted to be like, and enjoyed being with their parent. Further, participants felt that their parent praised them for doing well, did not criticize them or their ideas, helped them with things that were important, did not blame them for problems, and did not cancel plans without reason. With regard to employment in adolescence, participants reported holding on average, less than one job a year (M = 3.92 jobs, SD = 2.55) between ages 14 and 19. Further, participants indicated working on average less than full-time in adolescence (M = 30.56 hours per week, SD = 10.73).

For mesosystem level variables, participant's parents were on average, high school graduates (M = 12.09 years of school completed, SD = 2.76) and participants on average were in households above the poverty level (M = 1.73 times the poverty level, SD = 1.81). Finally, for the Physical Environment Risk Index Score, participants came from neighborhoods scoring low on physical risk (M = 1.82, SD = 1.50).

Dependent Variables. Participants reported that since leaving school, they worked an average of 1160 hours per year (SD = 778.81). This translates to 22.31 hours per week or part-time. Further, participants reported working relatively few jobs annually since leaving school. On average, youth scored a mean of 8.27 (SD = 0.67) on this measure which translated into holding 0.73 jobs annually since leaving school. In other words,

participants reported on average that they changed jobs less than once per year. It is important to note that this variable was reverse scored therefore a mean of 8.27 was indicative of holding fewer jobs which was interpreted as having greater stability of employment.

With regard to their most recent job in 2005, participants reported an average pay of $13.79 an hour (SD = 78.66). In addition, on the index of fringe benefits, participants indicated an average of 1.82 benefits (SD = 2.49). They also had access to an average of 3.17 vacation days per year (SD = 5.23) and 1.98 sick days per year (SD = 12.01). In summary, it appeared that the study sample had job characteristics similar to what has been found in the literature (Pinquart et al., 2003; Smith & Rojewski, 1993).

Preliminary Analyses

Preliminary analyses were performed to assess whether the independent variables differed across those participants that were and were not interviewed in 2005 (Round 9), as well whether differences existed across race, gender, or age. As previously stated, respondents were not interviewed for a variety of reasons including being deceased, not being available, and refusing to be interviewed. In the study sample, 2,042 were interviewed in 2005 whereas 756 were not interviewed in 2005. To determine whether there were differences between those interviewed and those not interviewed, a MANOVA was performed to determine the presence of any mean differences with regard to the independent variables. Since all dependent variables were gathered in 2005, a MANOVA was performed to determine the differences on the independent variables between those who were interviewed and those that were not interviewed in 2005. It is important to note that dependent variables were not included in this MANOVA because

they were gathered in 2005. Likewise, variables assessing employment in adolescence were not included in this MANOVA for the same reason. The results of this MANOVA determined that there were significant differences between those interviewed and those not interviewed in 2005 (Wilks' $\Lambda = 0.92$, $F (12, 1325) = 9.39$, $p < .001$). Post-hoc comparisons using Tukey's HSD revealed that compared with participants who were interviewed in 2005, those participants not interviewed in 2005 had higher levels of depressive symptoms (in 2004, 15.81 vs. 14.98, $d = 0.28$; in 2002, 15.41 vs. 14.95, $d = 0.18$; in 2000 15.58 vs. 15.10, $d = 0.18$), greater average cigarette use in the last 30 days (7.91 days vs. 5.70 days, $d = 0.26$), higher educational attainment (11.96 years of school vs. 10.98 years of school, $d = 0.62$), higher parent-youth relationship levels (26.11 vs. 25.28, $d = 0.18$), higher income to poverty ratios (2.32 vs. 1.73, $d = 0.27$), higher scores on the physical risk index (1.82 vs. 1.29, $d = 0.37$), and their parents had higher educational attainment (13.06 years of school vs. 12.09 years of school, $d = 0.35$).

In addition, MANOVAs also were performed to determine whether the sample differed according to race, gender, or age. These MANOVAs utilized the sample of participants who were interviewed in 2005 since this was the sample of interest in the study. Consistent with the finding that gender may affect career variables (Goldsmith & Velum, 1996; Goldsmith & Velum, 1997), results of the MANOVA indicated that that there were significant differences between men and women in the study (Wilks' $\Lambda = 0.78$, $F (20, 832) = 11.65$, $p < .001$). Post-hoc comparisons using Tukey's HSD found that women in the study worked more hours than men since leaving school (1284.56 vs. 1009.61 hours, $d = 0.36$). In addition, men reported more depressive symptoms than women (CES-D scores: 15.31 vs. 14.60 in 2004, $d = 0.23$; 15.41 vs. 14.39 in 2002, $d =$

0.34; 15.70 vs. 14.35 in 2000, $d = 0.45$). Men also reported more drinking in last 30 days than women (2.97 vs 1.73 days, $d = 0.46$), as well as more days using marijuana in the last 30 days (2.76 vs. 1.44 days, $d = 0.31$). Men worked more weekly hours in adolescence (i.e., ages 14 to 19) than women (32.13 vs. 28.65 hours per week, $d = 0.33$). Further, parents of male participants reported having higher educational attainment than parents of female participants (12.30 vs. 11.84 years of school, $d = 0.10$). Finally, men in the study had higher income-to-poverty ratios than women (1.88 vs. 1.54, $d = 0.10$).

The sample also differed with regard to race (Wilks' $\Lambda = 0.56$, $F(60, 2483) = 8.90$, $p < .001$). Post-hoc comparisons were conducted using Tukey's HSD. With regard to the dependent variables, these comparisons revealed that since leaving school, non-Hispanic White participants worked 236.58 more hours than non-Hispanic Black participants ($d = 0.57$), 351.64 more hours than Hispanic participants ($d = 0.31$), and 436.42 more hours than participants who were "other" races ($d = 0.45$). In addition, since leaving school, Hispanic participants worked 199.83 more hours than non-Hispanic Black participants ($d = 0.27$). However, since leaving school, Hispanic participants had 0.28 fewer jobs than non-Hispanic White participants ($d = 0.42$). Likewise, non-Hispanic Black participants had 0.23 fewer jobs than non-Hispanic White participants ($d = 0.34$). On the index of fringe benefits, non-Hispanic White participants reported 0.43 more benefits than non-Hispanic Black participants ($d = 0.19$), and Hispanic participants reported 0.38 more fringe benefits than non-Hispanic Black participants ($d = 0.17$). Hispanic participants also reported 1.31 more vacation days than non-Hispanic Black participants ($d = 0.27$) and 2.33 more vacation days than participants of "other" races ($d = 0.53$). Non-Hispanic White participants reported 0.87 more vacation days than non-

Hispanic Black participants (d = 0.19) and 1.90 more vacation days than participants of "other" races (d = 0.45).

With regard to independent variables in the study, on the Substance Use Index, non-Hispanic White participants reported scores 0.38 higher than Hispanics (d = 0.38), and 0.64 higher than non-Hispanic Black participants (d = 0.72). Similarly, participants of "other" races reported scores 0.48 higher than non-Hispanic Black participants (d = 0.16), and Hispanic participants report scores 0.26 higher than non-Hispanic Black participants (d = 0.33). On the measure of Cigarette use in the last 30 days, non-Hispanic White participants reported using cigarettes 7.05 days more than non-Hispanic Blacks (d = 0.74), and 7.18 days more than Hispanic participants (d = 0.75), whereas participants of "other" races reported using cigarettes 5.84 days more than non-Hispanic Black participants (d = 0.57) and 5.97 days more than Hispanic participants (d = 0.59) . Similar patterns were found on drinking behavior in the last 30 days where non-Hispanic White participants reported drinking 0.67 days more than Hispanic participants (d = 0.24) and 0.80 days more than non-Hispanic Black participants (d = 0.55). This pattern held consistent on marijuana use in the last 30 days where non-Hispanic White participants report using marijuana 0.96 days more than non-Hispanic Black participants (d = 0.18) and 1.21 days more than Hispanic participants (d = 0.24). For the employment in adolescence measure, non-Hispanic White participants reported 0.96 more jobs worked than participants of "other" races (d = 0.36), 1.43 more jobs than Hispanic participants(d = 0.58), and 1.55 more jobs than non-Hispanic Black participants (d = 0.62). Parents of non-Hispanic White participants had 0.84 years more education than parents of non-Hispanic Black participants (d = 0.48), 2.90 years more schooling than parents of

Hispanic participants (d = 0.99). Parents of participants from "other" races had 2.56 more years of education than parents of Hispanic participants (d = 0.70) and parents of non-Hispanic Black participants had 2.06 more years of education than parents of Hispanic participants (d = 0.68). On income-to-poverty ratio, non-Hispanic White participants came from households with a ratio 1.09 higher than non-Hispanic Black participants (d = 0.63) and a ratio 1.19 higher than Hispanic participants (d = 0.74). Finally, on the physical risk index, non-Hispanic Blacks were at higher risk than non-Hispanic Whites (1.00 higher, d = 0.75), Hispanics (0.62 higher, d = 0.37), or participants of "other" races (1.03 higher, d = 0.66). Also, Hispanic participants were at higher risk than non-Hispanic White participants (0.37 higher, d = 0.37).

Finally, the sample differed with regard to age (Wilks' $\Lambda = 0.91$, $F(40, 1664) = 1.92$, $p < .001$). Post-hoc comparisons using Tukey's HSD revealed that with regard to the Substance Use Index, participants who were 14-years-old in 1997 (i.e., 14-year-old cohort) report 0.15 more substance use than those who were 13-years-old in 1997 (i.e., 13-year-old cohort) (d = 0.33), and participants in the 13-year-old cohort report 0.19 more substance use than participants who were 12-years-old in 1997 (i.e., 12-year-old cohort) (d = 0.21). The Tukey's HSD comparisons also found that there were age differences on Parent-Youth Relationship variable where participants in the 12-year-old cohort report scores 0.85 higher than participants in the 13-year-old cohort (d = 0.14) and scores 1.17 higher than participants in the 14-year-old cohort (d = 0.21). Since there were differences with regard to gender, race, and age, all three variables were included in the model as control variables.

Intercorrelations of study variables

To determine how the independent and dependent variables were related, intercorrelations were calculated among the variables (see Table 5). Overall, 52.86% of the variables were correlated with each other that the $p < 0.001$ level. In addition, correlations were not above 0.70. Since no two variables shared more than 49% of the variance, the results were not likely affected by multicollinearity (Pedhazur, 1997). Overall, most correlations were in the expected direction.

As expected, indicators of latent variables were correlated with each other. The three depression indicators were correlated positively (r = 0.34 to 0.44). In addition, substance use items also were correlated positively (r = 0.39 to 0.67). Finally, job quality items were correlated positively (r = 0.25 to 0.65).

With regard to the independent variables, most correlations were in the expected directions. However, many correlation coefficients were low (ranging in strength from r= 0.08 to 0.28) which called into question the practical significance of these correlations. As expected, most substance use variables were negatively correlated with depression (r = -0.08 to -0.14), adolescent educational achievement (r = -0.08 to -0.23), and parent-youth relationship (r = -0.10) In addition, substance use variables were correlated positively with employment in adolescence (r = 0.10 to 0.28), income-to-poverty ratio (r = 0.11 to 0.15), and parent's educational achievement (r = 0.11 to 0.14). Likewise substance use variables were correlated negatively with physical environmental risk (r = -0.08 to -0.15). Finally, as expected that parent-youth relationship correlated positively with adolescent educational achievement (r = 0.09); however, parent-youth relationship also was correlated positively with depression (r = 0.12 to 0.15).

Table 5.

Bivariate Correlations of Measured Variables

Variables	1	2	3	4	5	6	7	8
Independent Variables								
Depression								
1. 2000 CES-D Score	1.00							
2. 2002 CES-D Score	0.44*	1.00						
3. 2004 CES-D Score	0.34*	0.41*	1.00					
Substance Use								
4. Substance Use Index Summary Score	-0.14*	-0.10*	-0.07	1.00				
5. Average Cigarette Use in last 30 days	-0.10*	-0.08*	-0.08*	0.67*	1.00			
6. Average Drinking in last 30 days	-0.04	-0.06	-0.06	0.50*	0.39*	1.00		
7. Average Marijuana Use in last 30 days	-0.06	-0.08*	-0.08*	0.49*	0.45*	0.48*	1.00	
8. Adolescent Educational Achievement (Highest grade completed	0.06	0.05	0.03	-0.15*	-0.23*	0.00	-0.08*	1.00
9. Parent-Adolescent Relationship (Highest relationship in 1997)	0.15*	0.12*	0.07	-0.10*	-0.04	-0.02	-0.04	0.09*
Employment in Adolescence								
10. Number of jobs from Age 14-19	-0.03	-0.02	0.01	0.28*	0.27*	0.19*	0.15*	0.03
11. Average hours worked per week from age 14-19	0.02	0.04	0.04	0.07	0.10*	0.10*	0.03	-0.16*
12. Parent educational achievement (Highest grade achieved of a p	0.06	-0.01	0.03	0.14*	0.14*	0.12*	0.11*	0.16*
13. Income to poverty ratio, 1997	0.06	0.04	0.03	0.15*	0.13*	0.15*	0.11*	0.19*
14. Physical Environment Risk Index Score	-0.04	-0.03	-0.01	-0.08*	-0.06	-0.15*	-0.06	-0.20*
Dependent Variables								
15. Employed in 2005	0.08*	0.10*	0.09*	0.07	0.07	0.11*	0.09*	0.09*
16. Average Annual Hours Worked Since Leaving School	.11*	0.15*	0.10*	0.09*	0.05	0.20*	0.07	0.23*
17. Annual Average number of Jobs Since Leaving School, Revers	0.04	0.06	0.06	-0.17*	-0.14*	-0.16*	-0.10*	-0.06
18. Hourly Pay of Most Recent Job in 2005	0.02	0.00	0.02	-0.01	-0.03	-0.01	-0.00	0.00
Job Quality (for most recent job in 2005)								
19. Index of Fringe Benefits	0.03	0.07	0.11*	-0.01	-0.07	0.03	-0.08*	0.18*
20. Number of Paid Vacation Days	0.03	0.08*	0.10*	-0.02	-0.07	0.01	-0.07	0.13*
21. Number of Paid Sick Days	0.02	0.01	0.05	-0.03	-0.05	-0.01	-0.04	0.06

Note: * p<.001

Variables	9	10	11	12	13	14	15	16
Independent Variables								
9. Parent-Adolescent Relationship (Highest relationship in 1997)	1.00							
Employment in Adolescence								
10. Number of jobs from Age 14-19	0.03	1.00						
11. Average hours worked per week from age 14-19	0.02	0.11*	1.00					
12. Parent educational achievement (Highest grade achieved of a p	0.06	0.16*	-0.11*	1.00				
13. Income to poverty ratio, 1997	0.12*	0.11*	-0.06	0.39*	1.00			
14. Physical Environment Risk Index Score	-0.13*	-0.12*	0.02	-0.22*	-0.36*	1.00		
Dependent Variables								
15. Employed in 2005	0.07	0.23*	0.10*	0.03	0.04	-0.07*	1.00	
16. Average Annual Hours Worked Since Leaving School	0.07	0.03*	0.38*	0.04	0.13*	-0.15*	0.47*	1.00
17. Annual Average number of Jobs Since Leaving School, Revers	-0.01	-0.55*	-0.05	-0.12*	-0.07	0.08	-0.15*	-0.32*
18. Hourly Pay of Most Recent Job in 2005	0.02	0.01	0.02	0.02	-0.00	-0.02	0.02	0.06
Job Quality (for most recent job in 2005)								
19. Index of Fringe Benefits	0.03	0.09*	0.06	0.01	0.09*	-0.12*	0.29*	0.37*
20. Number of Paid Vacation Days	0.02	0.04	0.11*	0.00	0.09*	-0.11*	0.25*	0.35*
21. Number of Paid Sick Days	-0.02	0.02	0.02	0.02	0.04	-0.03	0.07	0.11*

Note: * p<.001

Variables	17	18	19	20	21
Dependent Variables					
17. Annual Average number of Jobs Since Leaving School, Revers	1.00				
18. Hourly Pay of Most Recent Job in 2005	-0.02	1.00			
Job Quality (for most recent job in 2005)					
19. Index of Fringe Benefits	0.01	0.00	1.00		
20. Number of Paid Vacation Days	0.05	-0.00	0.65*	1.00	
21. Number of Paid Sick Days	0.03	-0.00	0.25*	0.26*	1.00

Note: * p<.001

As with the independent variables, correlation coefficients between the dependent variables were low, which called into question the practical significance of the correlations. Job quality variables correlated positively with being employed in 2005 and with stability of employment variables (r = 0.11 to 0.37).

Measurement Model

To study whether the theoretical propositions were supported with regard to which measures would comprise latent variables in the present study, two factor analyses were conducted. These two exploratory factor analyses were used with principal axis factor analysis as the extraction method. One analysis was completed with the independent variables and the second analysis was conducted with the dependent variables. With regard to the first factor analysis which examined the independent variables, two latent variables were confirmed (depression and substance use) in addition to seven observed variables. The seven observed variables included adolescent educational achievement, parent-adolescent relationship, number of jobs held between ages 14 through 19, average number of hours worked per week between ages 14 through 19, parent educational achievement, income to poverty ratio, and physical risk. Table 4 presents the factor loadings of the measures that comprised the latent variables.

The first latent variable was depression which consisted of the three depression variables. The second latent variable was substance use which consisted of the four substance use items. Factor loadings for each of these factors ranged from 0.60 to 0.88. All other independent variables were kept as observed variables. This was consistent with the proposed study, however while conceptually the number of jobs held and length of employment were indicative of a single factor, because these two items had different

metrics, they were kept as two indicators of employment stability rather than combined as a latent variable of employment stability. Figure 1 presents the organization of the independent latent and observed variables.

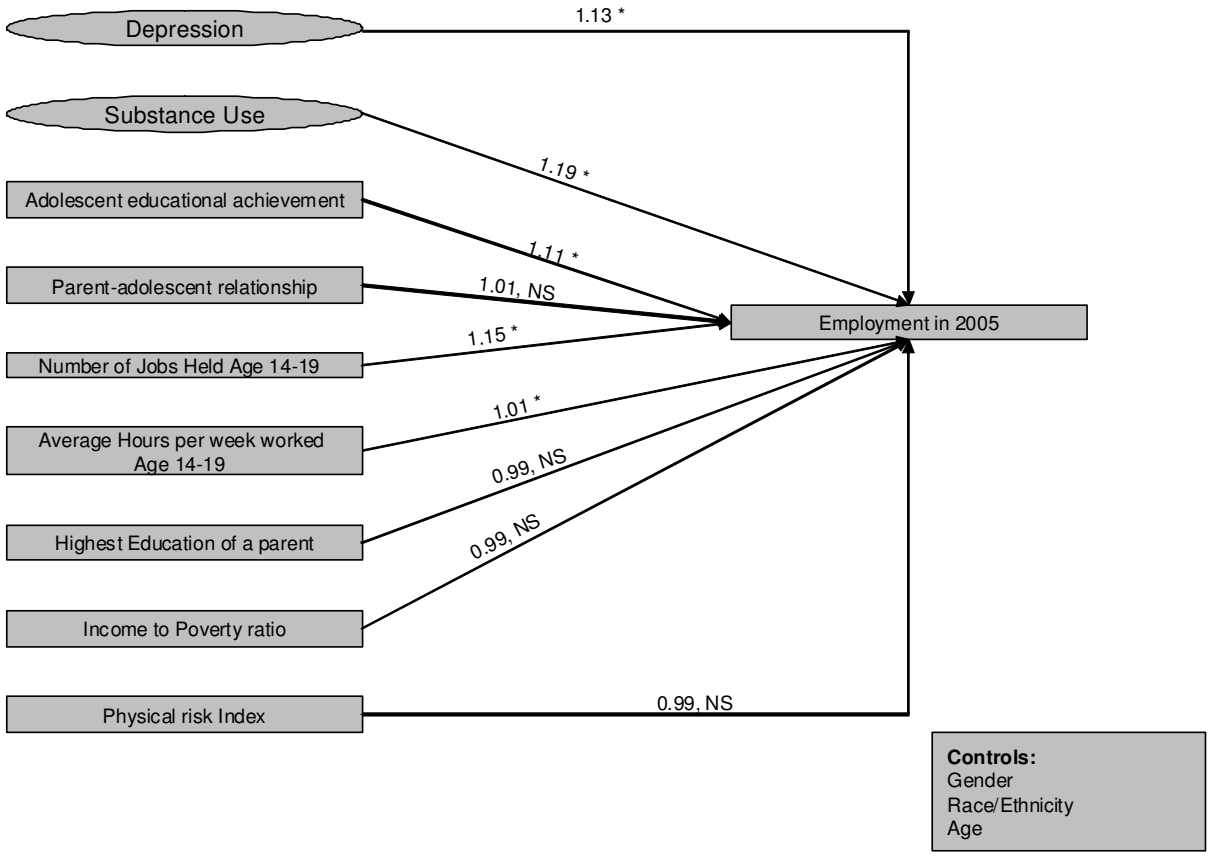
With regard to the second factor analysis which examined the dependent variables, one latent variable emerged (see Table 4). Job quality consisted of the index of fringe benefits, the number of paid vacation days, and the number of paid sick days. Factor loadings for these three variables ranged from 0.76 to 0.81. Hourly Pay did not load onto the Job quality factor and therefore was kept as an observed independent variable. In addition, since annual hours at job since leaving school and number of jobs since leaving school-reverse coded did not load onto a single factor, they were included in the model as two separate observed variables rather than as indicators of a latent variable of stability of employment. Figure 2 presents the organization of the dependent latent and observed variables.

Logistic regression results

A logistic regression within a latent variable framework was used to predict employment in 2005 (Round 9) from the independent variables (see Figure 3). The model was significant ($\chi^2 = 452.61$, df = 59, $p < .001$) and accounted for 23% of the variance in the dependent variable (R-square = 0.23), after controlling for age, race, and gender (i.e., net of control variables). In this sample, there were 1,657 participants who were employed and 385 participants who were not employed in 2005. In other words, 20% of the sample did not obtain employment in 2005.

Depression, substance use, adolescent educational achievement, the number of jobs held between ages 14 and 19, and the average number of hours worked per week

Figure 3. Logistic Regression Odds Ratios



*Note: * p<.001*

between ages 14 and 19 were predictors of employment in 2005. Odds ratios were calculated for the predictors in the logistic regression; these are presented in Table 6. For every unit increase in depression measure, the probability of being employed in 2005 increased by a factor of 1.13, likewise for every unit of increase in substance use, the odds of employment in 2005 increased by a factor of 1.19. Similarly, an increase in the grade of schooling attained by the participants increased the chances of being employed in 2005 increased by a factor of 1.11. An increase in the number of jobs held between the ages of 14 and 19 increased the odds of employment in 2005 increased 1.15. Finally, for every hour increase in average hours worked per week between the ages of 14 and 19, the likelihood of employment in 2005 increased by 1.01. However, parent-adolescent relationship, as well as mesosystem and exosystem variables were not related to employment in 2005.

Structural equation model results

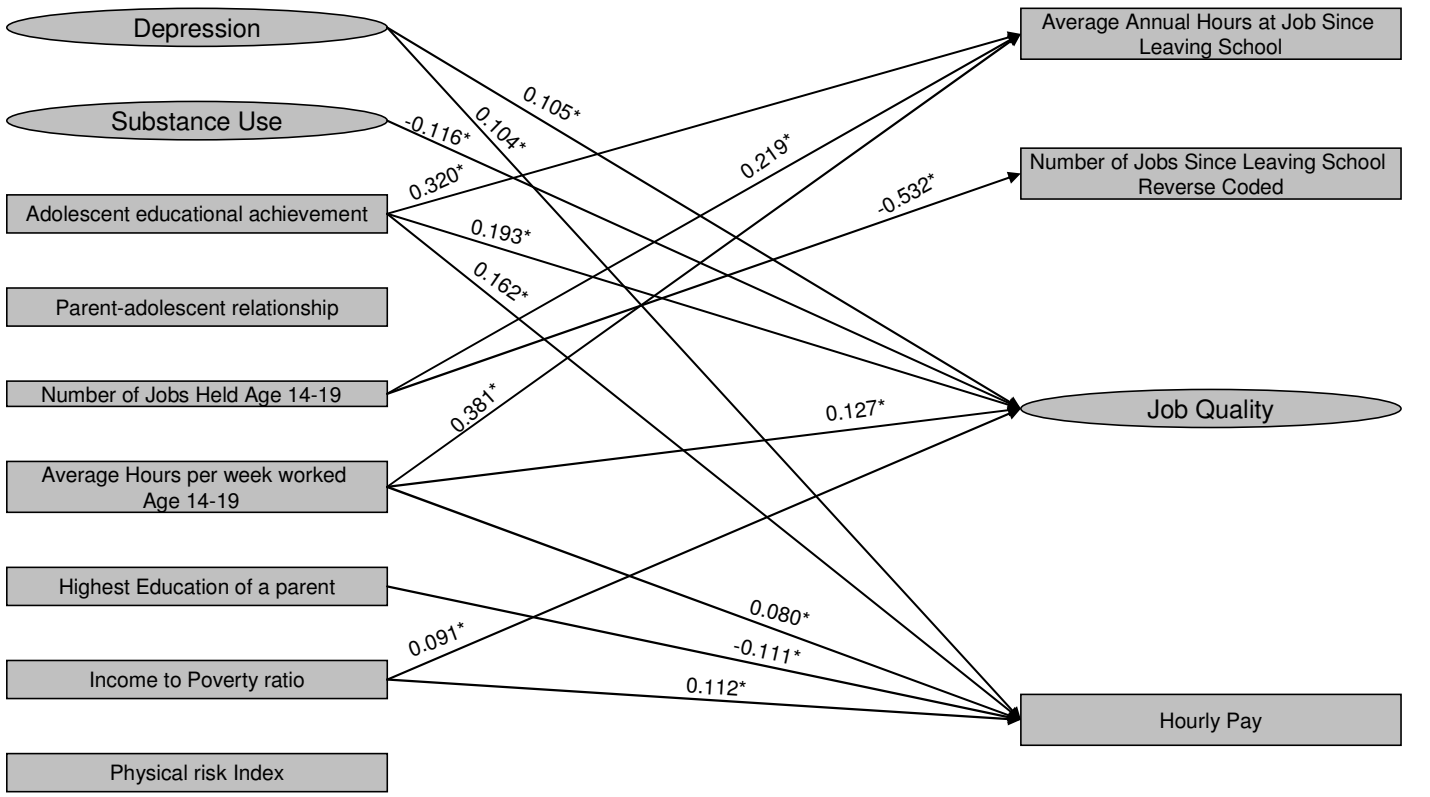
Figure 4 provides the structural equation model for stability of employment and job quality, after controlling for age, race, and gender (i.e., net of control variables). Standardized regression coefficients are shown on the figure and only significant paths are presented on the figure. As previously stated, model fit was evaluated with three conventional indices: The Comparative Fit Index (CFI) (Bentler, 1990), the Tucker-Lewis Index (TLI) (also known as the Non-Normative Fit Index) (Tucker & Lewis, 1973), and the Root mean square error of approximation (RMSEA). The fit of the structural equation model (χ^2 (90, n = 1657) = 504.63, $p < .001$, RMSEA = 0.05, CFI = 0.93, TLI = 0.92) indicated that the proposed model described the relationships between the independent and dependent variables adequately.

Table 6.
Logistic Regression Results

Predictor Variables	Model Predicting to Employment in 2005 Odds ratio
Individual Level Factors	
Depression	1.13 *
Substance Use	1.19 *
Adolescent Academic Achievement	1.11 *
Microsystem Factors	
Parent-Adolescent Relationship	1.01
Number of Jobs Held Age 14-19	1.15 *
Average Hours per week worked, Age 14-19	1.01 *
Mesosystem Factors	
Parent Educational Achievement	0.99
Income-to-poverty ratio	0.99
Exosystem Factors	
Physical Risk Index	0.99
Control Variables	
Age	0.97
Gender	
male	ref.
female	1.05
Race/Ethnicity	
White, non-Hispanic	ref.
Black, non-Hispanic	0.97
Hispanic	1.18
Other	1.01
N	2042
R-Squared	0.23

Note: * p<.001

Figure 4. Structural equation model for the adolescent predictor variables on job characteristics All path coefficients are completely standardized (only significant paths presented).



*Note: * p<.001*

The model indicated that most of the independent variables were related to job quality and stability of employment variables after controlling for age, race, and gender (see Table 7 and Figure 4). However, parent-youth relationship and the physical risk were not associated with the outcome variables in the model.

For the individual level variables, most relationships were in expected directions, however most relationships were also relatively small. Substance use had a negative relationship with job quality ($\beta = -0.116$, $p < 0.001$). Adolescent educational achievement had a positive relationship with the average annual hours worked since leaving school ($\beta = 0.320$, $p < 0.001$), job quality ($\beta = 0.193$, $p < 0.001$), and hourly pay ($\beta = 0.162$, $p < 0.001$). However, unexpectedly, depression had a positive relationship with job quality ($\beta = 0.105$, $p < 0.001$), and hourly pay ($\beta = 0.104$, $p < 0.001$).

The relationships between microsystem variables and outcome variables also were in expected directions. The number of jobs held between ages 14 through 19 had a positive relationship with the average annual hours worked since leaving school ($\beta = 0.219$, $p < 0.001$). However, there was a negative relationship between the number of jobs held between ages 14 through 19 and the number of jobs held by the participant since leaving school- reverse coded ($\beta = -0.532$, $p < 0.001$). The average hours per week worked between ages 14 to 19 was positively related with average annual hours worked since leaving school ($\beta = 0.381$, $p < 0.001$), job quality ($\beta = 0.127$, $p < 0.001$), and hourly pay ($\beta = 0.080$, $p < 0.001$).

The relationships between mesosystem and exosystem variables with the outcome variables were not all in the expected direction. Surprisingly, parent educational attainment was negatively related with hourly pay ($\beta = -0.111$, $p < 0.001$). However,

Table 7.
Standardized and Unstandardized Path Coefficients from the Structural Equation Model

	Average Annual Hours at Job Since Leaving School				Number of Jobs Since Leaving School, Reverse Coded				Hourly Pay				Job Quality			
Predictor Variables	Std. ß	ß	S.E.	Sig.	Std. ß	ß	S.E.	Sig.	Std. ß	ß	S.E.	Sig.	Std. ß	ß	S.E.	Sig.
Individual Level Factors																
Depression	0.075	0.056	0.026		0.059	0.024	0.012		0.104	0.067	0.023	*	0.105	0.111	0.043	*
Substance Use	-0.050	-0.084	0.057		-0.010	-0.009	0.025		0.014	0.021	0.048		-0.116	-0.275	0.094	*
Adolescent Academic Achievement	0.320	0.289	0.026	*	-0.051	-0.025	0.013		0.162	0.126	0.022	*	0.193	0.247	0.042	*
Microsystem Factors																
Parent-Adolescent Relationship	-0.008	-0.002	0.007		-0.018	-0.003	0.003		0.005	0.001	0.006		-0.053	-0.021	0.012	
Number of Jobs Held Age 14-19	0.219	0.106	0.014	*	-0.532	-0.141	0.003	*	0.070	0.029	0.012		-0.001	-0.001	0.022	
Average Hours per week worked, Age 14-19	0.381	0.046	0.004	*	-0.046	-0.003	0.002		0.080	0.008	0.003	*	0.127	0.022	0.005	*
Mesosystem Factors																
Parent Educational Achievement	-0.078	-0.035	0.015		-0.045	-0.011	0.005		-0.111	-0.043	0.012	*	-0.076	-0.049	0.024	
Income-to-poverty ratio	0.047	0.032	0.021		0.023	0.009	0.011		0.112	0.066	0.014	*	0.091	0.089	0.033	*
Exosystem Factors																
Physical Risk Index	-0.019	-0.016	0.026		0.011	0.005	0.013		-0.058	-0.043	0.023		-0.088	-0.106	0.043	
Control Variables																
Age	0.085	0.134	0.040	*	0.001	0.001	0.020		0.089	0.120	0.036	*	0.125	0.280	0.069	*
Gender																
female (ref.)																
male	0.116	0.293	0.068	*	-0.021	-0.029	0.033		0.152	0.328	0.061	*	-0.076	-0.273	0.114	
Race/Ethnicity																
White, non-Hispanic (ref.)																
Black, non-Hispanic	-0.165	-0.454	0.083	*	0.008	0.011	0.039		-0.051	0.121	0.074		-0.015	-0.060	0.138	
Hispanic	-0.096	-0.277	0.092	*	0.036	0.057	0.043		0.026	0.065	0.077		0.018	0.074	0.145	
Other	-0.073	-0.566	0.175	*	0.014	0.060	0.088		-0.048	-0.317	0.176		-0.116	-1.273	0.446	*

Note: * p<.001

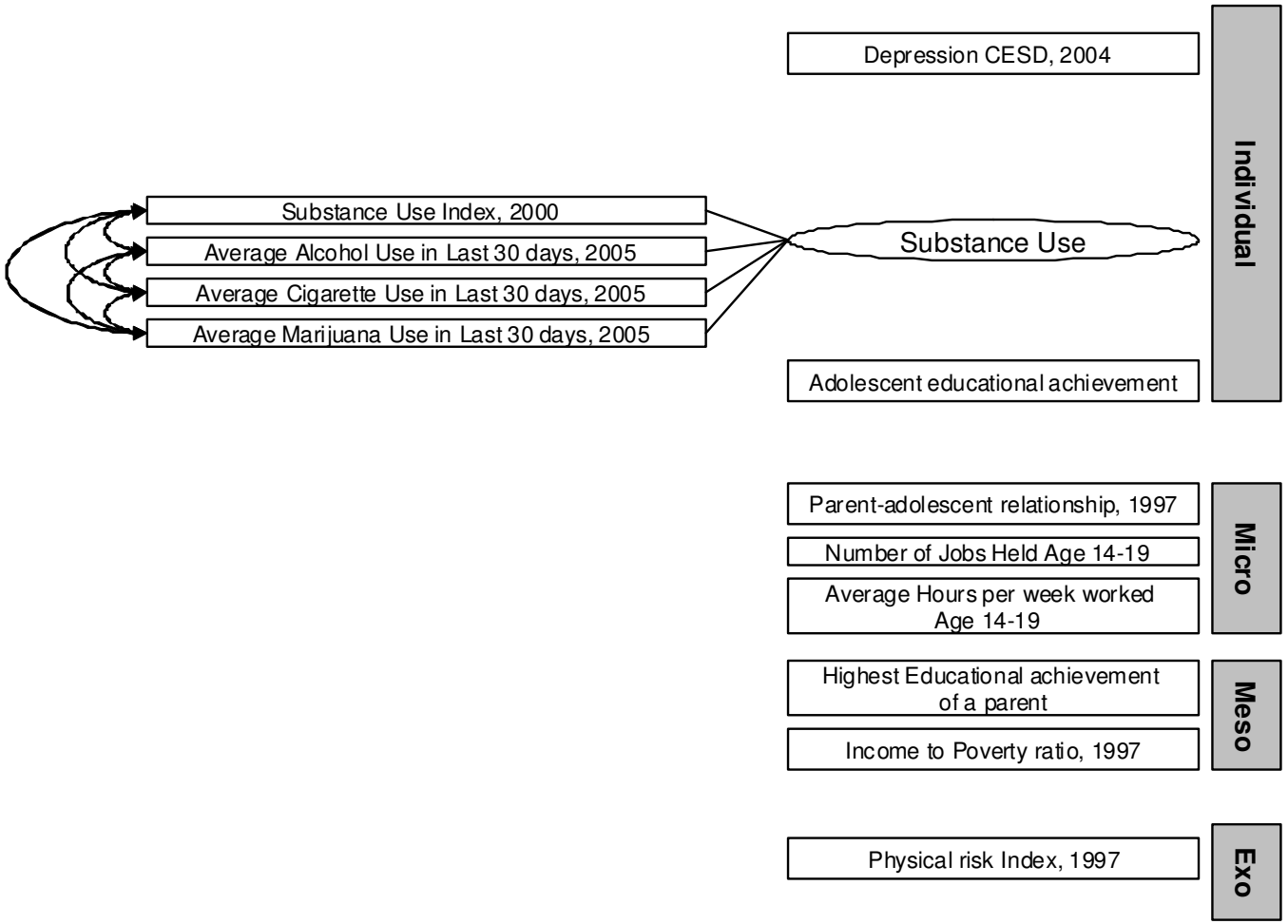
income-to-poverty ratio, as expected, was positively associated with job quality (β = 0.091, $p < 0.001$) and hourly pay (β = 0.112, $p < 0.001$).

Post-hoc analyses

The hypotheses in the present study examined attainment of employment in 2005 as well as the stability and quality of this employment in 2005. Specifically, the analyses defined the attainment of employment in the logistic regression as having worked any number of hours in 2005. Further, the structural equation model included participants who reported any employment in 2005. In an attempt to further explore the possible relationships between the predictor and outcome variables, modified predictor variables as well as a more stringent criteria for employment were used in post-hoc analyses.

With regard to the predictor variables, the post-hoc analyses used the most recent indicators of substance use (i.e., The substance use index from 2000, cigarette use in the last 30 days gathered in 2005, alcohol use in the last 30 days gathered in 2005, and marijuana use in the last 30 days gathered in 2005) instead of summary indicators of substance use alcohol use, marijuana use, and cigarette use (i.e., the substance use index summary score, average cigarette use, drinking, and marijuana use in the past 30 days) (see Figure 5). This allowed for an examination of how recent substance use influenced outcome variables. Statistics were calculated to determine the correlation between the most recent indicators of substance use and the summary indicators. For the measure assessing alcohol use in the last 30 days, the most recent indicator correlated positively with the summary indicator ($r = 0.64$). The most recent indicator of cigarette use in the last 30 days also was correlated positively with its summary indicator counterpart ($r = 0.84$). A similar correlation pattern was found with the indicators of marijuana use in the

Figure 5. Post-hoc Independent Variables Organized by Ecological Model



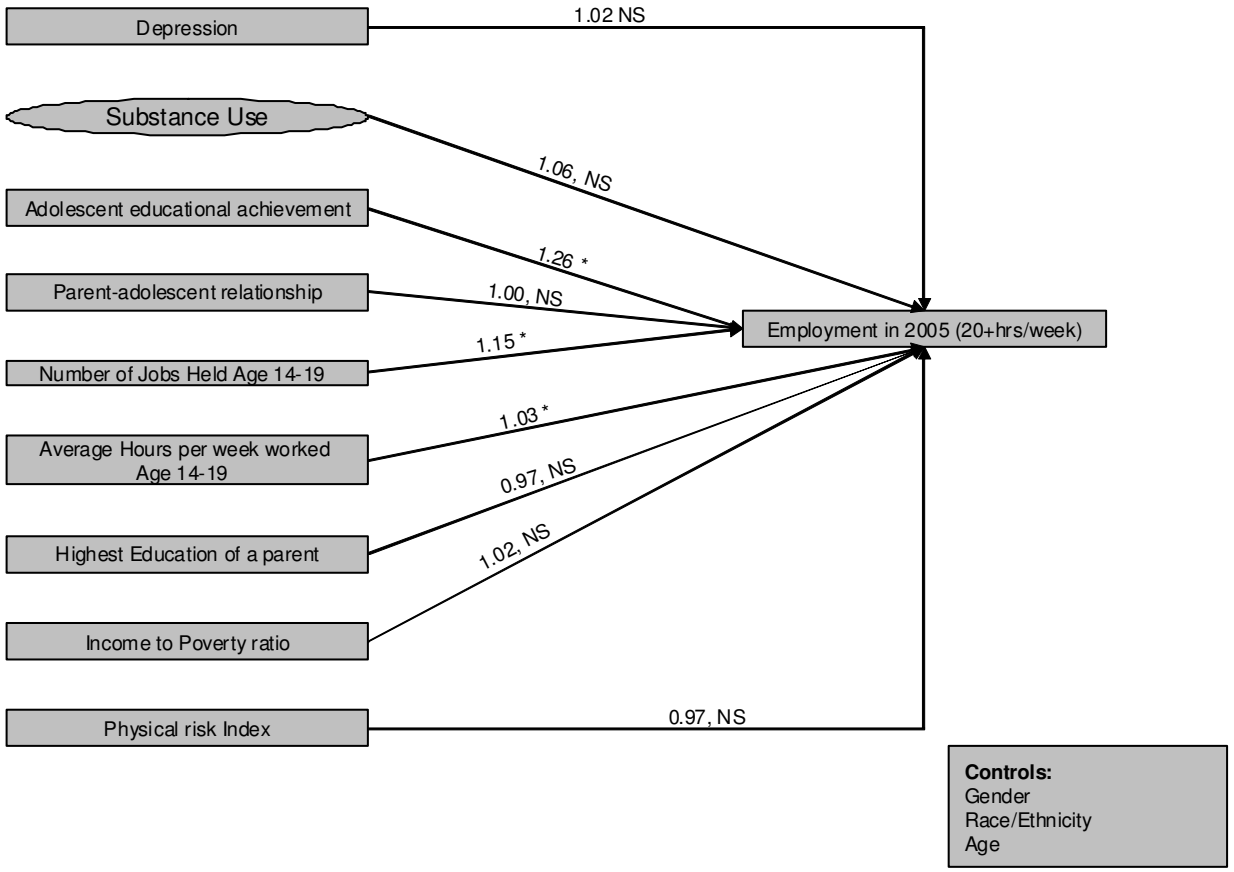
last 30 days (r = 0.74) as well as the substance use index items (r = 0.87). Similar to substance use items, the most recent indicator of depression was used instead of including three indictors of depression as a latent variable of depression (see Figure 5). It is important to note that while using the most recent indicators of substance use and depression allowed for the reduction of temporal distance between predictor and outcome variables, there is also a limitation created by using predictor variables from a single year. Specifically, reliability may have been affected since a fewer number indicators of substance use and depression were used.

With regard to the outcome variables, post-hoc analyses also included changes in attainment of employment as defined in the logistic regression. Specifically, attainment of employment was defined as working 20 or more hours per week in 2005 (see Figure 6).

Finally, the structural equation model was limited to participants who reported working 35 hours or more per week as this is the threshold used by the Bureau of Labor Statistics to define full-time employment (Bureau of Labor Statistics, 2008) (see Figure 7).

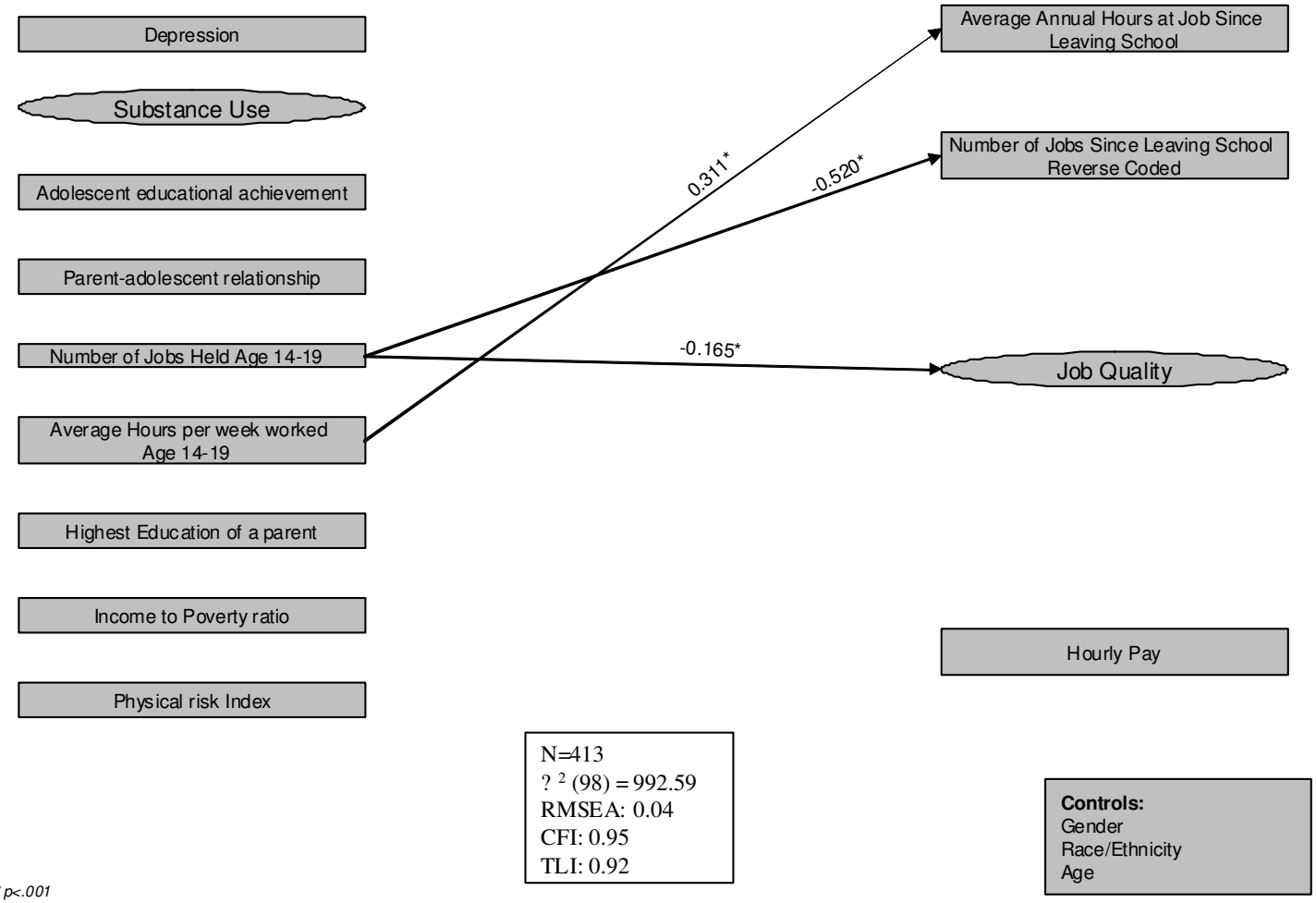
The post-hoc logistic regression was significant ($\chi^2 = 299.55$, df = 39, $p < .001$) and accounted for 39% of the variance in the dependent variable ($R^2 = 0.39$), after controlling for age, race, and gender (i.e., net of control variables). In the post-hoc logistic regression, there were 1,050 participants who were employed for 20 or more hours a week in 2005 and 992 participants who were either not employed or employed for less than 20 hours a week in 2005. In other words, 51.4% of the sample was employed for at least part-time in 2005. Similar to the main logistic regression, adolescent

Figure 6. Post-hoc Logistic Regression Odds Ratios



*Note: * p<.001*

Figure 7. Post-hoc Structural equation model for the adolescent predictor variables on job characteristics All path coefficients are completely standardized (only significant paths presented).



*Note: * p<.001*

educational achievement, number of jobs held between ages 14 and 19, and the average number of hours worked per week between ages 14 and 19 were predictive of being employed 20 hours a week or greater in 2005. However, in the post-hoc logistic regression, depression and substance use were not related to being employed 20 hours a week or greater in 2005. Odds ratios were calculated for the predictors in the post-hoc logistic regression; these are presented in Table 8. An increase in the grade of schooling attained by the participants increased the chances of being employed 20 hours a week or greater in 2005 by a factor of 1.26. An increase in the number of jobs held between the ages of 14 and 19 increased the odds of employment 20 hours a week or greater in 2005 by 1.15. Finally, for every hour increase in average hours worked per week between the ages of 14 and 19, the likelihood of employment 20 hours a week or greater in 2005 increased by 1.03. As with the main logistic regression, parent-adolescent relationship, as well as mesosystem and exosystem variables were not related to employment 20 hours a week or greater in 2005.

Results of the post-hoc structural equation model are presented in Figure 7. Standardized regression coefficients are shown on the figure and only significant paths are presented. The fit of the post-hoc structural equation model (χ^2 (98, n = 413) = 992.59, $p < .001$, RMSEA = 0.04, CFI = 0.95, TLI = 0.92) indicated that the model described the relationships between the independent and dependent variables adequately. While in the main structural equation model, many independent variables were related with stability of employment and job quality, when the model was restricted to participants who worked 35 or more hours per week, only two independent variables were related to stability of employment and job quality (see Table 9). As with the main

Table 8.

Post-Hoc Logistic Regression Results

Predictor Variables	Model Predicting to Employment in 2005 Odds ratio
Individual Level Factors	
Depression	1.02
Substance Use	1.06
Adolescent Academic Achievement	1.26 *
Microsystem Factors	
Parent-Adolescent Relationship	1.00
Number of Jobs Held Age 14-19	1.15 *
Average Hours per week worked, Age 14-19	1.03 *
Mesosystem Factors	
Parent Educational Achievement	0.97
Income-to-poverty ratio	1.02
Exosystem Factors	
Physical Risk Index	0.97
Control Variables	
Age	1.10 *
Gender	
male	ref.
female	1.28 *
Race/Ethnicity	
White, non-Hispanic	ref.
Black, non-Hispanic	0.74 *
Hispanic	0.93
Other	0.61 *
N	2042
R-Squared	0.39

Note: * p<.001

Table 9.

Post-Hoc Standardized and Unstandardized Path Coefficients from the Structural Equation Model

	Average Annual Hours at Job Since Leaving School				Number of Jobs Since Leaving School, Reverse Coded				Hourly Pay				Job Quality			
Predictor Variables	Std. ß	ß	S.E.	Sig.	Std. ß	ß	S.E.	Sig.	Std. ß	ß	S.E.	Sig.	Std. ß	ß	S.E.	Sig.
Individual Level Factors																
Depression	0.047	0.019	0.023		-0.007	-0.002	0.013		0.086	0.035	0.021		0.055	0.038	0.045	
Substance Use	-0.014	-0.021	0.111		-0.109	-0.109	0.059		-0.156	-0.234	0.115		-0.137	-0.351	0.223	
Adolescent Academic Achievement	0.062	0.066	0.058		-0.071	-0.053	0.039		0.059	0.065	0.060		0.105	0.198	0.125	
Microsystem Factors																
Parent-Adolescent Relationship	0.024	0.006	0.012		-0.036	-0.006	0.006		-0.050	-0.013	0.011		0.032	0.014	0.025	
Number of Jobs Held Age 14-19	0.028	0.012	0.022		-0.520	-0.147	0.008	*	0.035	0.015	0.023		-0.165	-0.118	0.045	*
Average Hours per week worked, Age 14-19	0.311	0.031	0.006	*	0.023	0.002	0.004		0.131	0.013	0.005		0.019	0.003	0.011	
Mesosystem Factors																
Parent Educational Achievement	0.101	0.039	0.025		-0.040	-0.011	0.015		-0.050	-0.020	0.026		-0.070	-0.048	0.050	
Income-to-poverty ratio	-0.007	-0.005	0.027		0.080	0.035	0.022		0.033	0.022	0.044		0.051	0.057	0.081	
Exosystem Factors																
Physical Risk Index	-0.025	-0.018	0.044		-0.060	-0.030	0.029		-0.098	-0.075	0.043		-0.108	-0.140	0.086	
Control Variables																
Age	-0.056	-0.078	0.071		0.033	0.032	0.044		0.128	0.183	0.072		0.093	0.227	0.145	
Gender																
female (ref.)																
male	0.118	0.277	0.123		0.046	0.074	0.074		0.187	0.455	0.130	*	-0.046	-0.190	0.245	
Race/Ethnicity																
White, non-Hispanic (ref.)																
Black, non-Hispanic	-0.006	-0.017	0.156		-0.071	-0.130	0.080		-0.175	-0.481	0.160	*	-0.046	-0.213	0.309	
Hispanic	0.044	0.113	0.184		0.036	0.065	0.109		-0.052	-0.138	0.175		0.103	0.469	0.358	
Other	-0.019	-0.135	0.300		-0.013	-0.063	0.198		-0.194	-1.402	0.448	*	-0.116	-1.429	0.908	

Note: * p<.001

structural equation model, the number of jobs held between ages 14 through 19 had a negative relationship with the number of jobs held by the participant since leaving school- reverse coded ($\beta = -0.520$, $p < 0.001$). In addition, the average hours per week worked between ages 14 to 19 was related positively to the average annual hours worked since leaving school ($\beta = 0.311$, $p < 0.001$) which was similar to findings in the main structural equation model. However, there was a negative relationship between the number of jobs held between ages 14 through 19 and job quality ($\beta = -0.165$, $p < 0.001$). This relationship was not significant in the main structural equation model.

Chapter V: Discussion

This chapter discusses the findings and implications of the results presented in Chapter 4. First, the findings of the main analyses are discussed with regard to the hypotheses. The results of the main analyses also are examined with regard to their convergence or divergence with previous literature. Second, the study sample, the study variables, and the intercorrelations of the study are discussed. Next, implications for counselors and other practitioners are presented. These implications include possible interventions, should these results be replicated, that psychologists might undertake when working with the school-to-work transition of non-college bound youth. Finally, limitations and strengths of this study are described and suggestions are provided for future research.

Discussion of the Main Analyses

The main purpose of the present study was to examine the school-to-work transition of non-college bound youth using a nationally representative sample of youth followed longitudinally. Specifically, this study sought to advance our understanding of the factors that contributed to a successful school-to-work transition among non-college bound youth. This study included both youth whom had completed high school as well as those who had dropped out.

The research question asked, "What were the predictors of job attainment, employment stability, and job quality for youth who were making the school-to-work transition?"

With regard to job attainment, depression, substance use, adolescent educational attainment, and employment in adolescence were associated with obtaining employment.

With regard to job quality and stability of employment, depression, substance use, adolescent educational attainment, employment in adolescence, parental educational attainment, and income were associated with these job characteristics. Parent-adolescent relationship and physical risk were not associated with job characteristics. In addition, while originally part of the study, personality variables were dropped from the analyses due to low reliability. As a result, it was not possible to determine how personality variables were related to the outcome variables.

With regard to testing the hypotheses, the first hypothesis stated that the independent variables would yield information about whether participants attained a job. Specifically, it was hypothesized that high levels of agreeableness and conscientiousness, low levels of depression, lack of substance use, high educational achievement, a more positive parent-adolescent relationship, more employment in adolescence, higher parent education level, lower poverty status, and lower physical risk would correlate with the likelihood of being employed. This hypothesis was investigated using a logistic regression within a latent variable framework which revealed that only four of these constructs were related to job attainment: depression, substance use, adolescent educational attainment, and employment in adolescence. Specifically, it was found that high levels of depression, the presence of substance use, greater academic attainment, and more employment in adolescence were related to the likelihood of job attainment. However, it is important to note that with most of these variables, the percent of variance explained was relatively small. The odds ratios ranged from OR = 1.01 to 1.19 and the amount of variance explained ranged from 3.1% to 20.2%. Moreover, only one of the independent variables explained more than 10% of the variance (i.e., substance use,

20.2%) At the same time, parent-adolescent relationship, parent education, income, and physical risk were found to have no relationship with job attainment.

While the findings regarding the employment in adolescence as well as the educational attainment variables were consistent with the hypothesized relationship, the findings concerning depression and substance use were opposite of the hypothesized relationships. The findings between employment in adolescence and job attainment were consistent with previous research which found that work experiences in adolescence were related with later employment outcomes (Alon et al., 2001). However, the number of jobs held in adolescence only explained 8.5% of the variance and the hours worked in adolescence only explained 3.1% of the variance. In addition, the findings between educational attainment and job attainment also reflected previous research findings (Linnehan, 1996; Pinquart et al., 2003). But as with employment in adolescence, educational attainment only explained a small amount of variance (6.8%). As such, the small relationships among employment in adolescence and educational attainment and job attainment may reflect the limited usefulness of these variables. An alternate explanation is that these two variables may have operated in combination with each other to influence job attainment. For example, previous studies have found that employment in adolescence may in fact have an influence on educational attainment (Leventhal et al., 2001; Mortimer & Staff, 2004; Sum et al., 2000). The relationships may have been stronger had an interaction effect or mediation effect been examined.

Depressive symptoms and substance use also were associated with a greater likelihood of being employed in 2005. While is the finding was unusual, the amount of variance explained by depressive symptoms was relatively small (8.9%) and therefore the

practical significance of this finding is questionable. However this finding may have reflected the moderating effect of other variables. With regard to moderating relationships between depressive symptoms and job attainment, previous research has suggested that basic skills associated with depressive symptoms were related to the school-to-work transition (Bynner, 1997). It may also have been that depressive symptoms in adolescence reflected a response to academic frustration and failure. In other words, depressive symptoms may be associated with youth who have made a commitment to enter the workforce due to academic difficulty. With regard to substance use, the variance explained was larger (20.2%) and this association between substance use and job attainment may have been influenced by other variables such as educational and occupational expectations (Brook et al., 2002), employment in adolescence (Paternoster et al., 2003), and educational attainment (Koch & McGeary, 2005). Indeed, when post-hoc analyses were run using only the most recent indicators of substance use and depression and employment attainment was defined as working 20 or more hours worked per week in 2005, substance use and depression were found to be non-significant and the influence of adolescent educational achievement increased, therefore lending support to the assertion that substance use and depression may have been operating through other factors. It may be that depression and substance use are related to the attainment of employment through their influences on educational achievement.

Despite these findings on job attainment, it is important to note that most of the significant odds ratios were low and the amount of variance accounted for was small suggesting that although the independent variables contributed to the likelihood of employment in 2005, the relationships were not strong and thus the contributions of the

variables to the prediction of employment were negligible. In addition, four of the independent variables (parent-adolescent relationship, parent education, income, and physical risk) were found to have no relationship with job attainment. Several possible explanations exist to explain the small and non-significant relationships between the independent variables and job attainment. First, it may have been that these were spurious findings. The post-hoc logistic regression provided support for substance use and depression possibly having been spurious findings. It also is possible that these small relationships may have reflected the relatively low influence of the independent variables on job attainment when a comprehensive set of predictors was examined. Third, there may have been other variables that accounted for job attainment. For instance, since previous research has found several links between employment variables and personality variables (Dudley et al., 2006; Lounsbury et al., 2004; Salgado, 1997; Tokar & Subich, 1997), it is possible that personality variables, had they been included in the analyses, may have explained variance in job attainment. In addition, other variables, such as criminal behavior and socioeconomic status which were not included in this study, have been theorized to be associated with job attainment (Hartnagel, 1998). Consequently, they may have accounted for the job attainment. Finally, previous research has examined all adolescents making the school-to-work transition and since this study examined only those adolescents that did not attend college, the influence of variables may have differed between those that attended college compared with those that did not. In summary, while there is some support for these factors in adolescence being important for job attainment, further investigation is needed in this area. However, it is important to note that overall, the logistic regression explained 23% of the variance in the attainment of employment.

Further, when post-hoc logistic regression was run, the independent variables explained 39% of the variance in the attainment of employment. Therefore, overall the model was accounting for a significant amount of employment attainment. Although the independent variables explained a small amount of variance in the attainment of employment, when considering the practical implications of small findings on a population as large as those who are making the school-to-work transition, even small significant relationships can have some utility in informing practice. Consequently, the first hypothesis was partially supported.

The second hypothesis stated that the independent variables gathered in 1997 through 2005 would predict employment stability and job quality in 2005. In particular, it was hypothesized that high levels of agreeableness and conscientiousness, low levels of depression, lack of substance use, high educational achievement, a positive parent-adolescent relationship, employment in adolescence, high parent education level, low poverty status, and low physical risk would contribute to high stability of employment and high job quality. Levels of agreeableness and conscientiousness were not included in the analyses due to low reliability in measuring these constructs. This hypothesis was addressed using a structural equation model which revealed that while depression, substance use, adolescent educational attainment, employment in adolescence, parental educational attainment, and income were related to job quality, parent-adolescent relationship and physical risk were not. In addition, it was found that adolescent educational attainment and employment in adolescence were related to employment stability. However, depressive symptoms, substance use, parent-adolescent relationship, parental educational attainment, income, and physical risk were not related with

employment stability. Since personality variables were not included in the structural equation model due to low reliability, it was not possible to measure the relationship between personality and job characteristics. As with the logistic regression, many of the relationships between the independent variables and the outcome variables were relatively small. The standardized beta weights ranged from $\beta = 0.104$ to 0.532, which translated into the independent variables accounting for between 1.08% and 28.3% of the variance of the outcome variables. However, a majority were under $\beta = 0.20$ indicating that most independent variables accounted for less than 5% of the variance of the outcome variables. Nonetheless, as with the logistic regression, it should be noted that overall, the structural equation model explained between 12.9% and 35.7% of the variance in the outcome variables. Specifically, the overall structural equation model accounted for 35.7% of the variance in the hours worked since leaving school, 31.8% of the variance in the number of jobs held since leaving school reverse coded, 13.5% of the variance in job quality, and 12.9% of the variance in hourly pay. Although the independent variables explained a small amount of variance in the stability of employment and job quality variables independently, the overall influence of these variables is noteworthy. Moreover, the practical implications of these findings on a population as large as those who are making the school-to-work transition suggest that even small relationships can have some utility in informing practice. However, when post-hoc analyses were run, few paths between independent variables and dependent variables were significant and as such, caution should be used in interpreting the practical significance of the independent variables. In summary, due to the relatively small relationship between most of the independent variables and stability of employment and

job quality as well as the non-significance of other variables, the second hypothesis was partially supported.

Only three of the significant relationships in the structural equation model predicted more than 10% of the variance in the outcome variables: adolescent educational attainment, the number of jobs held in adolescence, and the number of hours worked in adolescence. Adolescent educational attainment was positively associated with the number of hours worked since leaving school. In other words, higher levels of education were associated with working more hours upon transitioning to the workforce. This was consistent with the finding that youth who had a high level of education were more likely to hold more stable employment and be employed longer (Linnehan, 1996; Wiesner et al., 2003; Yates, 2005). Interestingly, adolescent educational attainment was not associated with the number of jobs a participant held since leaving school. This may have reflected the phenomenon in the school-to-work literature known as "churning" (Yates, 2005). In other words, it may have been youth in this sample were engaging in a process of finding a more stable job. This theory would be consistent with findings that it may take several years for youth to find stable employment (Yates, 2005).

The employment in adolescence variables also were related with outcome variables. The number of jobs held in adolescence was related holding more jobs upon making the transition to the workforce. In addition, the number of hours worked in adolescence was positively related with the number of hours worked since leaving school. This is consistent with previous research that has found employment in adolescence is related with a successful transition to the workforce (Mortimer & Staff, 2004; Smith & Rojewski, 1993). The unexpected finding that employment in adolescent

was associated with holding more jobs upon transitioning to the workforce may have been the previously mentioned process of "churning" (Yates, 2005). In summary, employment in adolescence appears to carry over into stable employment in the school-to-work transition. The magnitude of the relationships while among the larger found in this study were still relatively small, however this is consistent with previous work that has found small but significant relationships between employment in adolescence and employment during and after the school-to-work transition (Mortimer & Staff, 2004). A post-hoc analysis was run with the sample of participants who worked 35 hours or greater a week in 2005. This post-hoc analysis revealed that only the employment in adolescence variables were related to outcome variables. The relationships with employment in adolescence and employment since leaving school were similar to the relationships in the main structural equation model. However, a new relationship emerged indicating that the number of jobs held in adolescence was related negatively to job quality. Since many employers do not offer job benefits to part-time workers, this relationship may have reflected the influence of work in adolescence when only those who attained full-time work were included. It may have been that working a greater number of jobs in adolescence results in youth having less experience at any particular job in adolescence. As a result, this pattern may have carried into adulthood and youth may not have held jobs long enough to receive benefits. Additionally, youth who worked more jobs in adolescence may have attained jobs with fewer benefits in adulthood. These post-hoc analyses lend evidence to the assertion that employment in adolescence carries over into the transition to the workforce.

However, it must be noted that the confound of time may have been manifested in the employment in adolescence variables. Since this study included high school dropouts as well as high school completers, it is possible that the employment in adolescence variables were capturing the same information as the outcome variables. Consequently, the relationship between employment in adolescence variables and stability of employment variables may not have been independent. In other words, some youth may have dropped out of school before the age of 19, therefore the data on outcome variables for these youth may have overlapped with their employment in adolescence. This confound reflects a difficulty in studying the school-to-work transition which is that the transition line can often be unclear. While examining employment in adolescence as a variable of interest for a successful school-to-work transition may yield important information, there also exists a need to clarify the definition of employment in adolescence in such a manner as to separate it from employment after leaving school.

Although a few independent variables could be interpreted with practical significance, a majority of the independent variables in the structural equation model had relatively small associations with outcome variables. Accordingly, there was less practical significance with these associations. In general, the significant paths between the independent variables and job quality as well as hourly pay were relatively small, accounting for less than 5% of the variance. Results of the structural equation model revealed that substance use was negatively related with job quality whereas adolescent educational attainment, the average hours worked in adolescence and income were positively related with job quality. In addition, the number of jobs held in adolescence was positively related with the hours worked since leaving school. The influence of

substance use on job quality may be related to research findings relating substance use with disconnection (i.e., not being in school or employed) (Hair, 2005). However the small association of substance use with job quality may be due to the fact that substance use has been previously found to operate through other variables such as educational and occupational expectations (Brook et al., 2002), criminal activity (Hartnagel, 1997), and educational attainment (Paternoster et al., 2003). The small association of substance use with job quality may also reflect a measurement limitation in this study. Specifically, since substance use was measured by a 3 item index, and self-report measures of substance use in the previous month, there were aspects of substance which may not have been captured by the measures. Also the self report nature of the measures may mean that some people were not completely honest. While steps were taking during data collection to minimize response bias (e.g., providing a secure private environment, and having participants use an audio computer-assisted self-interview), participants may not have fully disclosed their substance use. The associations of job quality and educational attainment reflect findings in the literature that link education and job satisfaction (Pinquart et al., 2003; Verhofstadt et al., 2007). Likewise, the link between employment in adolescence and job quality has been suggested by other researchers (Zimmer-Gembeck & Mortimer, 2006). In addition, adolescent educational attainment, the average number of hours worked in adolescence, and income were positively related with hourly pay. Although the strength of these findings were relatively small, they were consistent with previous research examining employment in adolescence (Mortimer & Staff, 2004), income (Rojewski & Kim, 2003), and educational attainment (Verhofstadt et al., 2007).

Although depression was positively related with job quality as well as hourly pay (i.e., participants reporting higher levels of depression also reported higher levels of job quality and greater hourly pay), this finding may have been spurious given that the relationship between depression and job quality accounted for less than 2% of the variance. In fact, a post-hoc analysis found that depression was unrelated to job quality or stability of employment lending further support to the conclusion that depression was not related to job quality for this sample of young people. Further, as with the logistic regression, the association between depression and job quality may have reflected a moderating effect of other variables such as basic skills (Bynner, 1997).

Another small but unexpected finding was that parental educational attainment was negatively related to hourly pay. In other words, participants whose parents had lower levels of educational attainment also reported higher levels of pay. However, this finding also may have been spurious and the small relationship between parental educational attainment and hourly pay may be due to a measurement issue. Specifically, since parental educational attainment only reflected the highest educational attainment of a parent in the household, there was information lost. Consequently, the parental educational attainment measure may not have captured the full influence of parental educational attainment. It also may be that parental relationships need to consider not only the highest quality relationship a participant reports but also the lowest quality relationship. A post-hoc analysis provided further support for the lack of relationship between parental educational attainment and hourly pay.

Finally, several independent variables were found to have no relationship with job characteristics. Specifically, parent-youth relationship and physical risk were not

associated with job quality or employment stability. This might have occurred because after accounting for the variance explained by the other independent variables, parent-youth relationship and physical risk were not as critical. In other words, since the individual level variables were significantly related with the outcome variables, parent-youth relationship and physical risk may have been operating through these individual variables. This is consistent with Bronfenbrenner's (1986) assertions that distal variables may have an influence on more proximal variables. For example, physical risk has been associated with mental health and school performance (Ainsworth, 2002; Wandersman & Nation, 1998). Further, researchers have acknowledged the challenge in separating out the influence of poverty from physical risk (Holloway & Mulherin, 2004). Consequently, the influence of physical risk may have been working through poverty. Likewise, parent-adolescent relationship may have influenced the outcome variables through its effect on other variables such as psychological distress (Falci, 2006), resilience (Ungar, 2004), and delinquent behavior (Wright & Cullen, 2001). Further, it may be that these two independent variables are mediated by other aspects of a youth's experience. Indeed, previous research has suggested that parental factors are mediated by other environmental factors such as routine family activities and monitoring of adolescents (Hair, Moore, Garrett, Ling, & Cleveland, 2008). Had these additional variables been included or examined as mediation variables, associations between physical risk, parent-adolescent relationship, and job outcomes may have been seen.

Several reasons may account for the few practically significant paths in the structural equation model. First, since stronger associations were found with employment stability compared with job quality, it may have been that employment stability is the

more important construct in the school-to-work transition than job quality. Another theory is that these variables may have been working differently than modeled. For instance, it may have been that employment stability acted as a mediator between the independent variables and job quality variables. In other words, stable employment may be a path to a high quality job. Another possible explanation for the small associations found was that this sample was limited to youth who had not attended college, it is possible that for college-bound youth, the predictors of job characteristics differ. Finally, personality variables may have contributed to the variance of the outcome variables had they been included. Indeed, previous research has indicated that personality variables contributed up to 10% of the variance to job quality measures (Furnham et al., 2002).

Lastly, the third hypothesis stated that individual level variables would have the greatest influence on the school-to-work transition of non-college bound youth. In other words, the relationship between the predictor and the outcome variables would be stronger with proximal variables (e.g., individual level and microsystem variables) and weaker with distal variables (i.e., mesosystem and exosystem variables). Overall, there was no discernable pattern of relationships between proximal or distal variables and the outcome variables. In fact, most of the relationships between the independent variables and job attainment, stability of employment, and job quality were relatively small. Consequently, the findings did not support the third hypothesis.

Nonetheless, these findings do provide initial directions for future research on the school-to-work transition. Specifically, these small relationships suggest that researchers may need to examine multiple variables in adolescence on multiple levels of the

ecological model as well as more complicated models in the school-to-work transition such as mediation or moderation models.

Discussion of the study sample, variables and intercorrelations.

Study Sample. Overall, the study sample reported relatively high levels of depressive symptoms, low levels of substance use, a mean education of less than high school, moderately-high levels of parent-youth relationship, holding less than one job a year and working less than full-time in adolescence. In addition, the sample had parents who had a mean education of high school completion, lived above the poverty level, and came from neighborhoods with low physical risk. However, there were significant differences between the study sample and the sample of participants who were not interviewed in 2005. Specifically, the study sample reported lower levels of depressive symptoms, less cigarette use, less educational attainment, lower levels of parent-youth relationship, lower levels of income, and lower levels of physical risk. Further, the study sample had parents with less educational attainment. In other words, for most of the variables, the study sample was less healthy than those who were not interviewed in 2005. The only variables where the study sample was more healthy was on depressive symptoms, cigarette use, and less physical risk. Consequently, this may have affected the results as this sample of youth who was generally healthier. It may have been that these youth would have been more successful in making the school-to-work transition.

With regard to demographics, the study sample differed with regard to race however this was not surprising given that race has been related to salient career constructs (Brown, 1996). On the other hand, it also was found that men reported more depressive symptoms than women. This finding is surprising given that depression is

more prevalent in women than men in the general population (Weissman & Olfson, 1995). This differing pattern may be due to the fact that this study utilized a subsample of the general population, mainly non-college-bound youth.

Study Variables. With regard to the study variables, there were some interesting findings worthy of discussion. With regard to substance use variables, the participants reported a mean cigarette use of 7.91 days out of the last 30. Although this was less than half of the days in a month, it is still concerning. This number may have been due to the sample being limited to non-college-bound youth. Indeed, researchers have suggested that educational attainment may be connected with substance use (Griffin, Botvin, Doyle, Diaz, & Epstein, 1999). Other research has found that smoking behavior decreases with increased education (Solberg, Asche, Boyle, McCarty, & Thoele, 2007).

In addition, job quality was assessed with a latent construct (which consisted of fringe benefits, the number of paid vacation days, and the number of paid sick days) as well as with an item measuring hourly pay. While the hourly pay item was theoretically related to job quality, an examination of the measurement model revealed that it did not load the same factor. Several possible reasons exist for hourly pay being kept separate. It may be that some high paying jobs did not have benefits. For example, participants temporary work positions may not have been offered benefit. In addition, it may have been that there was not enough variability in the sample with regard to job quality. Although jobs spanned the full range of fringe benefits, sick days, and vacation days, a majority of the participants fell within a more restricted range. Consequently, differences in hourly pay may not have been associated with the benefits, sick, or vacation days received.

Finally, the employment stability variables (i.e., number of jobs since leaving school and the hours worked since leaving school) were not part of the same latent factor in the measurement model. While this is in contrast to the theorized construction of stability of employment, it may have simply reflected the time lapse between when youth leave school and find stable employment (Yates, 2005). During this time period, while youth may be working, they may also be changing jobs or working with multiple jobs. Since this study examined work experiences of youth since leaving school, it follows that this process of finding stable employment was captured in the outcome variables.

Intercorrelations. Caution is needed with regard to interpreting many of the correlations among the variables of interest in this study. For example, substance use was positively correlated with employment in adolescence (r = 0.07 to 0.28), income-to-poverty ratio (r = 0.11 to 0.14), and parent's educational achievement (r = 0.05 to 0.06). In addition, substance use variables also were negatively correlated with physical environmental risk (r = -0.06 to -0.15). However, these unexpected correlations were extremely small (sharing less than 1% of the variance) and not practically significant. Thus, researchers should not interpret these findings given the magnitude of the associations among the variables. One possible explanations for the weak correlations among the study variables is that they might have represented the independence of the variables and that the variables captured unique constructs. This would provide support for why stronger correlations occurred among the indicators of each of the latent variables in the study.

Implications for Counselors and Practitioners

The present study examined a comprehensive set of predictors and considered more than job attainment in measuring a successful school-to-work transition. While previous research has examined the school-to-work transition of non-college-bound youth, most only have considered a limited set of variables and only examined job attainment (e.g., Bynner, 1997; Hartnagel, 1998; Neumark & Rothstein, 2005; Pinquart et al., 2003; Taylor, 2005). By considering a comprehensive set of predictor variables, and job quality and employment stability in addition to job attainment, this study expanded the understanding of a successful school-to-work transition.

Unfortunately, these findings do not provide support for intervention strategies in working with non-college-bound youth making the school-to-work transition. In fact, the main finding of this study was that the independent variables studied did not have a large influence on the school-to-work transition for this sample. These findings do suggest that the school-to-work transition for non-college-bound youth requires further study. Specifically, these small relationships suggest that researchers may need to examine multiple variables in adolescence on multiple levels of the ecological model as well as more complicated models in the school-to-work transition such as mediation or moderation models. In other words, counselors need to consider and test alternative models and variables prior to attempting to influence non-college-bound youth in making a successful transition to the workforce. For example, counselors may also consider variables such as a potential mediating effect of environmental variables between parent-youth relationship and a successful school-to-work transition. Some variables that have been shown to mediate the influence of parent-youth relationship on outcomes include

routine family activities or parental monitoring of adolescents (Hair et al., 2008). Further, counselors should continue to consider more than simply job attainment in determining whether non-college-bound youth have made a successful transition to the workforce. Such a position would be consistent with calls to action in the research (Worthington & Juntunen, 1997).

Limitations

As with all studies, this study has several limitations. First, while employment stability and job quality may vary from job to job, the present study only examined the most recent job. As a result, it was not possible to determine whether there was a pattern of improvement over time with regard to stability of employment or job quality. It may have been that there was improvement from job to job that was not captured in this study. Further, since the employment stability variables included all jobs held since leaving school, these variables included participants whom were currently employed. Consequently, the estimates of job duration potentially included ongoing jobs (i.e., the duration of the ongoing job was unknown). Second, with regard to job attainment, the study only examined whether the adolescent was employed at any point 2005 (Round 9). While the NLSY97 provides more complex information, it was not included in the present study since the main gaps in the literature were with regard to stability of employment and job quality, not job attainment. Third, the present study did not examine moderation or mediation effects. Since the present study was exploratory in nature, the primary goal was to determine the relative influence of variables in adolescence on stability of employment and job quality. Finally, the data in the present study included repeated-measures and variables were collected at different levels of nesting (e.g.,

neighborhood and family). As a result, structural equation modeling in the present study is limiting as it does not account for potential non-independence of observations (Osborne, 2000). Therefore, hierarchical linear modeling may be useful for future research.

There also were some measurement issues to note. First, some of the independent variables in the present study collapsed available information in the NLSY97. For instance, parent-youth relationship combined information about mothers and fathers to create a measure of the highest parent-youth relationship a participant reported. While using both variables would have yielded more information about the paths between the independent variables and outcome variables, missing data and collinearity diagnostics indicated that these variables should be combined. Combining data from mothers and fathers also excluded information about whether relationships with parents were troubled. It may have been that case that youth experienced one positive relationship with a parent figure and one negative relationship with the other parent figure at the same time. Second, many of the measures were self-report and consequently may have resulted in a response bias. For instance, although steps were taken in the NLSY97 to reduce response bias on sensitive topics, participants may have been subject to a response bias when reporting on substance use. In addition due to the design of the NLSY97 data collection, not all variables were available at all times. Therefore, all independent variables were collapsed to a single level of the structural equation model. Finally, it is important to note that time may have been a confound in the study. Since participants in the present study ranged from ages 12 to 14 in 1997, there were differing lengths of time between when they left school and when outcome variables were measured in 2005.

Strengths

The present study also had several important strengths. First, the present study examined not only job attainment but also other career characteristics which have been determined to be important for a successful school-to-work transition (Neumark, 2002; Stone & Mortimer, 1998; Yates, 2005). As previously stated, most of the existing research on this population has focused on job attainment and less on other career characteristics (e.g., Bynner, 1997; Hartnagel, 1998; Neumark & Rothstein, 2005; Pinquart et al., 2003; Taylor, 2005). Accordingly, this study helped to fill an important gap in the existing literature on the school-to-work transition of non-college bound youth by examining three characteristics that have been identified as important markers of a successful transition: job attainment, employment stability, and job quality (Blustein et al., 1997; Hartnagel, 1998). Thus, this study offered a more comprehensive view of the school-to-work transition. Second, this study utilized a nationally representative sample which allowed for a generalizability of the results. Finally, the present study considered a wide range of predictors which spanned various levels of the ecological model. This allowed for counselors to make an informed decision about potential strategic areas of intervention. Unfortunately, due to the low strength and non-significance of the independent variables in the study, it is still unknown where interventions should occur to assist non-college-bound youth make the school-to-work transition.

Directions for Future Research

This study considered a comprehensive set of predictors as well as multiple aspects of the school-to-work transition for non-college-bound youth. Since there were few findings of practical significance, this study serves to raise questions for future

research. Specifically, the results of this study raise the question of whether there are other variables that contribute to the school-to-work transition as well as whether the school-to-work transition is a more complicated process that requires a more complex model.

Clearly more research is needed that utilizes the longitudinal nature of available data. Since this study was exploratory in nature, the primary purpose of this research was to determine whether there were factors in adolescence that would be important for a successful school-to-work transition for non-college-bound youth. Future research could examine moderators or mediators. For instance, it may be helpful to understand whether independent variables operate through each other (e.g., the influence of employment in adolescence on educational attainment). Likewise, it may be helpful to test whether outcome variables work to mediate one another (e.g., employment stability may mediate the relationship between independent variables and job quality).

In addition, future research could consider time as a variable. Since non-college bound youth included both high school dropouts as well as youth who completed high school, an examination of timing of leaving school and timing of other predictors (e.g., substance use) may provide unique insight into this population. While youth who complete high school have the benefit of more education, they also have less time to make the school-to-work transition. Conversely, those who drop out of high school receive less education but also have more time to make the transition to the workforce. Likewise, future research could consider whether the associations between the independent variables and outcome variables differ with regard to whether youth go to

college. It may be that non-college-bound youth represent a unique population with a different set of predictors.

Third, future research could consider whether job quality improved for participants from job to job. It may be useful to consider whether the most recent job a participant holds reflects improvements in quality from the first job a participant held since leaving school.

Finally, future research should consider other potential predictors of a successful school-to-work transition. Given the small relationships found in this study, there are several other variables researchers may consider. For instance, a reliable measure of personality, parental employment, or information on learning disabilities in youth might potentially yield important information. In addition, future research may also consider not only educational attainment but also high school completion. This would allow for an exploration of how high school completion factors into the school-to-work transition. Finally, previous research has suggested that criminal behavior and delinquency (Hartnagel, 1998) as well as educational and occupational expectations (Brook et al., 2002) may be important variables to consider in examining the school-to-work transition.

Conclusion

Over the course of completing this study, it became apparent to me that non-college-bound youth and their transition to the workforce is a topic of interest for policymakers, researchers, and counselors. When discussing this study with others, I would receive the reaction of, “wow, I don’t know why I never thought about that population before.” This reaction underscores the importance of examining non-college-

bound youth and their transition to the workforce. In addition, it emphasizes how this population really is "the forgotten half."

It is hoped that this study will spark interest for researchers to continue to examine the school-to-work transition of this unique population. While previous research has addressed individual aspects of this transition, we have yet to achieve a more complete picture which will allow counselors and policymakers to best assist non-college-bound youth successfully navigate their transition to the workforce. Too often we believe that a successful school-to-work transition is simply getting a job and forget that career success may include more than simply job attainment. This is a cause of concern since non-college bound youth comprise a significant percentage of youth (Bureau of Labor Statistics, 2007a).

Although there is much research on school-to-work transition and interventions for this population do exist (Hair et al., 2003), the factors that researchers, counselors, and policymakers need to consider in ensuring a successful transition is still unclear. The challenge will be to continue to clarify the complexity of this transition to build successful interventions. By doing so, we offer non-college-bound youth the best chance of succeeding in their transition and help to re-connect this "forgotten half."

Appendix

Variables and Questions Used in the Present Study

Construct	Variable	Question	Response Categories
Independent Variables			
Personality	Conscientiousness	How much do you feel that disorganized describes you as a person? Where 1 means organized and 5 means disorganized. (reverse code)	1 to 5
		How much do you feel that undependable describes you as a person? Where 1 means dependable and 5 means undependable. (reverse code)	1 to 5
		How much do you feel that conscientious describes you as a person? Where 1 means not conscientious and 5 means conscientious.	1 to 5
		How much do you feel that thorough describes you as a person? Where 1 means careless and 5 means thorough.	1 to 5
	Agreeableness	How much do you feel that agreeable describes you as a person? Where 1 means quarrelsome and 5 means agreeable.	1 to 5
		How much do you feel that difficult describes you as a person? Where 1 means cooperative and 5 means difficult. (reverse code)	1 to 5
		How much do you feel that stubborn describes you as a person? Where 1 means flexible and 5 means stubborn. (reverse code)	1 to 5
		How much do you feel that trustful describes you as a person? Where 1 means distrustful and 5 means trustful.	1 to 5
Depression	2000, 2002, 2004 CES-D	How much of the time during the last month have you been a very nervous person?	1 All of the time 2 Most of the time 3 Some of the time 4 None of the time
		How much of the time during the last month have you felt calm and peaceful? (reverse code)	1 All of the time 2 Most of the time 3 Some of the time 4 None of the time
		How much of the time during the last month have you felt downhearted and blue?	1 All of the time 2 Most of the time 3 Some of the time 4 None of the time
		How much of the time during the last month have you been a happy person? (reverse code)	1 All of the time 2 Most of the time 3 Some of the time 4 None of the time
		How much of the time during the last month have you felt so down in the dumps that nothing could cheer you up?	1 All of the time 2 Most of the time 3 Some of the time 4 None of the time
Substance Use	Substance Use Index, 1997-2000	Have you ever smoked a cigarette?	0 No 1 Yes
		Have you ever had a drink of an alcoholic beverage? (By a drink we mean a can or bottle of beer, a glass of wine, a mixed drink, or a shot of liquor. Do not include childhood sips that you might have had from an older person's drink.)	0 No 1 Yes
		Have you ever used marijuana, for example: grass or pot, in your lifetime?	0 No 1 Yes
	Cigarette Use in the last 30 days, 1997-2005	During the past 30 days, on how many days did you smoke a cigarette?	1 to 30
	Alcohol Use in the last 30 days, 1997-2005	During the last 30 days, on how many days did you have one or more drinks of an alcoholic beverage?	1 to 30
	Marijuana Use in the last 30 days, 1997-2005	On how many days have you used marijuana in the last 30 days?	1 to 30
Adolescent Educational Achievement	Highest Grade Completed as of 2005-Created Variable	The highest grade completed as of the survey date.	1st Grade to 8 years of college or more

Construct	Variable	Question	Response Categories
Independent Variables (cont)			
Parent-Youth Relationship	Youth report of parent-youth relationship, 1997	With regard to parent, I think highly or him or her.	0 Strongly Disagree 1 Disagree 2 Neutral 3 Agree 4 Strongly Agree
		With regard to parent, S/he is a person I want to be like.	
		With regard to parent, I really enjoy spending time with him/her	
		How often does s/he praise you for doing well?	0 Never 1 Rarely 2 Sometimes 3 Usually 4 Always
		How often does s/he criticize you or your ideas? (reverse code)	
		How often does s/he help you do things that are important to you?	
		How often does s/he blame you for her problems? (reverse code)	
		How often does s/he make plans with you and cancel for no good reason? (reverse code)	
Employment in Adolescence	Number of jobs held age 14 to 19	Total number of employee-type jobs held from age 14 through age 19.	0 to 20
	Average hours per week worked age 14 to 19	Cumulative hours worked at an employee-type job from age 14 through age 19 as of the interview date.	0 to 18829
		Cumulative weeks worked at an employee-type job from age 14 through age 19 as of the interview date.	0 to 346
Parent Education Level	Highest Grade Completed as of 2005-Created Variable	Highest grade completed by respondent's residential father/mother (includes both biological and non-biological fathers/mothers).	1st Grade to 8 years of college or more
Poverty Status	Income-to-poverty ratio, 1997	Ratio of household income to poverty level in the previous year.	0 to 16.27
Physical Risk	Physical Environment Risk Index	In the past month, has your home usually had electricity and heat when you needed it? (Youth report)	No=Risk (1) Yes=Not Coded as Risk (0)
		How well kept are most of the buildings on the street where the adult/youth resident lives? (Interviewer report)	Poorly kept = High Risk (2) Fairly Well Kept = Moderate Risk (1) Well Kept = Not coded as Risk (0)
		How well kept is the interior of the home in which the youth respodent lives? (Interviewer report)	Poorly kept = High Risk (2) Fairly Well Kept = Moderate Risk (1) Well Kept = Not coded as Risk (0)
		When you went to the respondent's neighborhood/home, did you feel concerned for your safety? (Interviewer report)	Yes = Risk (1) No = Not coded as Risk (0)
		In a typical week, how many days from 0 to 7 did you hear gunshots in your neighborhood?	1 or more days = Risk (1) 0 days = Not coded as Risk (0)
Dependent Variables			
Job Attainment	Employment in 2005	Total number of weeks worked at any employee-type job since last interview date.	0 to 425; 0 coded as not-employed in 2005, others coded as employed in 2005
Stability of Employment	Average Annual Hours at Job Since Leaving School	A created variable caculated by determining when the participant left school, then calculating the number of hours worked in any employee-type job since that date and dividing by the number of years since leaving school.	
	Number of Jobs Since Leaving School	A created variable calculated by determining when the participant left school, then calculating the number of employee-type jobs held since that date. A range of 0 to 10 jobs was present in the data and this number was reverse scored using a 10 job scale.	
Hourly Pay	Hourly pay of most recent job	The hourly rate of pay as of the job's stop date; if the job lasted 13 weeks or less the hourly rate of pay is as of the job's start date.	0 to 3000

Construct	Variable	Question	Response Categories
Dependent Variables (cont)			
Job Quality	Number of Paid Vacation Days of most recent job	How many total days of paid sick, vacation or personal leave [are/were] you entitled to each year?	0 to 25
	Number of Paid Sick Days of most recent job	How many days of paid sick or personal leave [are/were] you entitled to per year?	0 to 365
	Index of fringe benefits	Please look at the following list of benefits which employers sometimes make available to their employees. [At this time/At the time you left], which of the benefits on this list would it [be/have been] possible for you to receive as part of your [{job_assignment}] [as/with] [employer name]? -A flexible work schedule -Medical, surgical or hospitalization insurance which covers injuries or major illnesses off the job -Life insurance that would cover your death for reasons not connected with your job -Dental Benefits -Paid maternity or paternity leave -Unpaid maternity or paternity leave which would allow you to return to the same job, or one similar to it -A retirement plan other than Social Security -Tuition reimbursement for certain types of schooling -Company provided or subsidized childcare -Employee Stock Ownership Plan(s)	0 to 10

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