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EFFECTS OF MULTIPLE ROLE ASSUMPTIONS
ON THE ALCOHOL USE OF FEMALES IN YOUNG ADULTHOOD

A Thesis in

Counselor Education

by

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ABSTRACT

The purpose of this study was to determine whether the prevalence of drinking and binge drinking was related to engagement in multiple adult roles for a sample of women in young adulthood. In addition, the relative importance of various combinations of roles, (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) was analyzed in order to provide more detailed information regarding implications for counseling and prevention applications. The sample included 249 young adult females, all originally from a rural Appalachian school district. Data were obtained from a self-report survey administered during the fall of 1995. Results of logistic regression analysis indicated significant main effects for the roles of marriage or engagement, parenthood, both marriage or engagement plus parenthood, fulltime employment, and both marriage plus fulltime employment on prevalence of drinking and/or binge drinking over 30 days when controlling for age. Of those women in dual roles, those who were married or engaged plus parenting were about half as likely to drink over 30 days (OR=.46) and those who were married or engaged plus employed were approximately twice as likely to drink (OR=2.04) as those who were married or engaged but without a dual role. A trend toward less drinking, especially binge drinking, was noted as the women in this sample increased the number of roles they assumed from one to three. The study demonstrated the importance of young adult role assumptions in lowering the prevalence of drinking. Implications of this research for the school counseling profession include implementing
prevention strategies that have been demonstrated to increase involvement in a variety of conventional activities and attachment to conventional persons for school-aged children is discussed. Prevention strategies aimed at young adults using community and workplace approaches were also discussed, including an integrated approach and consistent messages transmitted through the mass media as well as the importance of a focus made on risk factors in young adulthood for prevention to be effective.
# TABLE OF CONTENTS

LIST OF TABLES ........................................................................................................... viii

ACKNOWLEDGEMENTS ................................................................................................. ix

Chapter 1: INTRODUCTION ......................................................................................... 1
  Young Adult Role Assumptions and Alcohol Use .............................................. 1
  Statement of the Problem .................................................................................. 5
  Statement of the Purpose .................................................................................. 6
  Significance of the Study .................................................................................. 7
  Limitations of the Study .................................................................................... 8
  Research Questions .......................................................................................... 9
  Operational Definitions ..................................................................................... 11

Chapter 2: REVIEW OF THE LITERATURE .......................................................... 14
  Theories ............................................................................................................ 14
    Role Theory .................................................................................................. 15
    Limitations of Role Theory ........................................................................ 16
    Role Selection and Role Socialization ......................................................... 17
    Social Control Theory ................................................................................. 18
  Young Adult Alcohol Use ................................................................................ 19
    New Freedoms and New Responsibilities .................................................... 21
    Changes in Alcohol Use ............................................................................... 23
  Demographic factors ....................................................................................... 27
    Gender .......................................................................................................... 27
    Age ............................................................................................................... 28
  Young Adult Role Assumptions ...................................................................... 28
    Marriage or engagement .............................................................................. 29
    Parenthood .................................................................................................. 30
    Fulltime Employment ................................................................................... 32
    Current enrollment in Postsecondary Education ....................................... 33
    Living Independently ................................................................................... 35
    Multiple roles ............................................................................................... 38

Chapter 3: METHOD ................................................................................................. 41
  Research Design .............................................................................................. 41
  Community ...................................................................................................... 42
  Sample ............................................................................................................. 44
  Procedure ........................................................................................................ 45
Measures ................................................................. 47
Demographic Variables............................................. 47
Dependent Variables............................................... 47
Independent Variables............................................. 48
Control Variable..................................................... 50
Research Questions................................................ 50
Analysis.................................................................... 52
Summary................................................................. 58

Chapter 4: RESULTS ....................................................... 59
Background Data....................................................... 60
Missing Data............................................................. 60
Initial Analyses......................................................... 61
Statistical Methods................................................... 72
Research Questions.................................................. 78

Chapter 5: DISCUSSION ................................................... 86
Summary and Discussion of Results.......................... 89
Limitations.............................................................. 97
Needed Research..................................................... 100
Implications for Applications................................... 101
Literature connecting early drinking levels with adult levels......102
Rationale and targets of prevention............................. 104
Prevention efforts..................................................... 105
Risk factors in young adulthood............................... 110
Summary of implications......................................... 111
Summary and Conclusions....................................... 111

REFERENCES .............................................................. 115

APPENDIX A  Frequency of Independent and Dependent Variables ..........130

APPENDIX B  Frequency tables and missing data for marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, living independently, drink, and binge .................................................. 132

APPENDIX C  Crosstabulations for three levels of the variable of Living Arrangements.......................................................... 134
APPENDIX D  Crosstabulations for three levels of the variable of Employment status ..................................................135

APPENDIX E  Logistic Regression Classification Tables on prior Cut values of .63 for drink and .43 for binge .......................136

APPENDIX F  The tables of SPSS coefficients for computing the chi-square equation for differences of two variables .........................139

APPENDIX G  Hosmer and Lemeshow Goodness-of-fit statistics tables from SPSS for one-role versus two-role variables ..........141

APPENDIX H  Hosmer and Lemeshow Goodness-of-fit statistics tables from SPSS for two-role versus three-role variables ......145
LIST OF TABLES

Table 1  Log-linear equations of variable combinations at steps one and two of the analysis .................................................................53

Table 2  Number of women with zero, one, two, three, and four social roles (marriage, parenthood, fulltime employment, current enrollment in postsecondary education and living independently) 
(n=249) ...........................................................................................................65

Table 3  Age and social roles of women with zero, one, two, three, or four social roles (n=249) ..................................................................................66

Table 4  Percent of single role 30-day drinking (n=237) and 
30-day binge drinking (n=249). .................................................................67

Table 4.1 Percent of dual role 30-day drinking (n=237) and 
30-day binge drinking (n=249). .................................................................68

Table 4.2 Percent of three-role 30-day drinking (n=237) and 
30-day binge drinking (n=249) ................................................................68

Table 5  Summary of logistic regressions of prevalence 
rates of past 30-day drinking controlling for age 
for single roles (n=237). ..............................................................................69

Table 6  Summary of logistic regressions of prevalence 
rates of past 30-day binge drinking controlling 
for age for single roles (n=249). .................................................................70

Table 7  p-values and odds ratios for one role versus two roles for drinking 
(n=237) ........................................................................................................78

Table 8  p-values and odds ratios for one role versus two roles for bingeing 
(n=249) ........................................................................................................80

Table 9  p-values and odds ratios for two roles versus three roles for drinking 
(n=237) ........................................................................................................83

Table 10 p-values and odds ratios for one role versus two roles for bingeing 
(n=249) ........................................................................................................84
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INTRODUCTION

Young Adult Role Assumptions and Alcohol Use

In the alcohol research literature the concept of “role” is often used to explain associations of drinking behavior with social characteristics (Hajema & Knibbe, 1998). Temple and associates (1991) suggested that shifts in roles leading to more stable relations in an individual’s life cause a decrease in alcohol consumption (Temple, Fillmore, Hartke, Johnstone, Leino, & Motoyoshi, 1991). Taking on multiple roles was expected to be accompanied by a reduction in the psychological need to use alcohol and by an increase in social monitoring and social control of drinking (Wilsnack & Cheloha, 1987). In the current study, these roles include getting engaged or married (marriage), becoming a parent and living with child(ren) (parenthood), entering the workforce (fulltime employment), currently attending post-high school higher education (current enrollment in postsecondary education), and moving away from the family home (living independently).

Two critical tasks of young adult development are establishing the roles of marriage and parenthood in one’s life. The choice to get married and have children represents a significant decision for young adults, implying a radical change in life-style and responsibility. The increase in responsibility and extent of life-style change
accompanying family formation may not be well appreciated by those who marry early in life, because they have little life experience and perhaps are not fully mature enough to handle the strains of marital roles (Newcomb & Bentler, 1988).

Role assumptions, such as engagement, marriage, and parenthood, have been associated in the literature with decreased use of alcohol in young adult women (Zucker, 1979; Bachman, Wadsworth, O’Malley, & Schulenberg, 1997). Influences on drinking in young adulthood appear to be complex and the results suggest that such family formation factors are among the most important. Several explanations have been proposed as to how these associations develop. For example, marriage can affect personal, financial and domestic circumstances of individuals such that social activities and hence opportunities for drinking are also affected. Kandel and colleagues (1986) have found that failure to enter into the conventional roles of young adulthood, such as marriage or engagement and parenthood, are important predictors of continued high levels of alcohol use in young adulthood (Kandel, Simcha-Fagan, & Davies, 1986). Marriage appears to act as a moderating influence on alcohol consumption; however, the reason for this remains unclear.

There are also differences in the alcohol use of young adult women who have different employment status. Previous research documents differences in alcohol use between young adults who are employed part-time or fulltime, or are homemakers (e.g., Bachman et al., 1997). Young adult women who enter the role of fulltime employment after high school have average levels of alcohol use during high school. After high
school, their alcohol use increases only slightly. Those in fulltime civilian employment show slight increases in proportions of current drinkers, and slight decreases in proportions reporting any binge drinking during the past 2 weeks. Part-time employees, on the other hand, show patterns of alcohol use nearly identical to postsecondary education students. This is likely because most young adults who hold part-time jobs are, in fact, also postsecondary education students. Young adult women who list homemaker as their primary occupation are most likely to have the lowest drinking levels as compared to the other employment categories (Bachman et al., 1997).

There is a gap in the literature when it comes to understanding whether combinations of social roles and employment roles would result in further decreases in the use of alcohol in young adult women. Some important questions to resolve this issue might be whether being married or engaged and employed fulltime predicts a lower prevalence of binge drinking or occasions of drinking and whether knowing fulltime employment adds to the explanation of alcohol use over just marriage or engagement. The term prevalence in this context would refer to whether or not the participant had used alcohol at all or had had a binge-drinking episode during the past 30 days.

Current enrollment in a postsecondary education program has also been found to be correlated with alcohol use. The lives of those who are enrolled in postsecondary education differ from those who begin fulltime employment immediately after graduation from high school. In general, during high school the postsecondary education-bound students have been found to use less alcohol (Bachman et al., 1997). During the years
immediately following high school, however, postsecondary education students, including technical school or military, tend to experience relatively greater increases in alcohol use than their peers who have not gone on to postsecondary education.

The rate of past month alcohol use increases with increasing levels of education according to the 2000 National Household Survey on Drug Abuse (SAMHSA, 2001). However, binge drinking was least prevalent among postsecondary education graduates when compared to those who had had some high school; graduated from high school; or had some college.

Bachman’s group (1981 and 1984) studied the effects of living independently on the use of alcohol using their Monitoring the Future sample. Their findings indicated that compared with alcohol use at the end of high school, alcohol use in the following few years would be 1) decreased among those living with spouse 2) relatively unchanged among those still living with parent(s), and 3) increased among those living in dormitories or other arrangements involving few adults (Bachman, Johnston, & O’Malley, 1981; Bachman, O’Malley, & Johnston, 1984).

Finally, multiple roles (i.e. roles that co-occurred such as engagement or marriage, parenthood, and fulltime employment) were found by Bachman and colleagues (1997) to have resulted in the greatest decreases in alcohol use in young adult women (Bachman, et al., 1997). An understanding of multiple role effects on alcohol use within the realm of social roles has therefore been addressed in the literature, however, further combinations of multiple roles, which consider the number and type of roles such as
fulltime employment, current enrollment in postsecondary education, and living independently, have not been addressed. Some questions related to multiple roles would be whether having three or more young adult role assumptions add more to the prediction of decreases in binge drinking and 30-day drinking in young adult women, and what combinations of roles have the most effects. Filling these gaps in the literature would have important implications regarding rationale for and targets of prevention and intervention strategies for young adult women.

**Statement of the Problem**

One problem associated with women’s use of alcohol in young adulthood, discussed in the previous section, may include premature assumption of adult roles. While the use of alcohol in national samples is highest during early young adulthood, it gradually drops off through young adulthood (SAMHSA, 2001; NCADI, 1999). Another problem is that some individuals do not reduce their drinking through young adulthood. While it is not clear whether this “maturing out” effect is related most to developmental or role assumptions, such as marriage or engagement, parenthood, or fulltime employment, (Gotham, Sher, & Wood, 1997), it is anticipated that involvement in roles may be used to target individuals for intervention who do not mature out of earlier binge drinking and may be at risk for higher prevalence of drinking and binge drinking (Stacy, Newcomb, & Bentler, 1991).
This study will be focused primarily on prevalence of alcohol use and women’s young adult role assumptions. Kandel’s role incompatibility theory (Kandel, 1980; Yamaguchi, 1990) states that entering into new roles in young adulthood may help decrease alcohol involvement. The current gaps in the literature regarding the nature, number, and combinations of multiple role assumptions in young adulthood present a problem in the more complete understanding of how role socialization affects changes in alcohol use. The current research addresses these gaps in the literature by adding to the current knowledge of the relationship of women’s role assumptions in young adulthood to the problems of drinking in our society, and particularly by addressing the impact of multiple roles that may provide a key to understanding alcohol use in young adult women.

**Statement of the Purpose**

The purpose of this study is to determine whether the prevalence of drinking and binge drinking is related to engagement in multiple adult roles for a sample of women in young adulthood. In addition, the relative importance of the various combinations of roles (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) will be analyzed in order to provide more detailed information regarding implications for counseling and prevention approaches.
Both the number and type of roles will be examined in this study as predictors of drinking and binge drinking over the past month. The number of roles will range from one to four, and the types of roles will include marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently.

**Significance of the Study**

The current study further addresses the limitations in the literature on use of alcohol in the transition to young adulthood in several important ways. First, while many studies regarding use of alcohol have focused on women in postsecondary education (Miller, Toscova, Miller, & Sanchez, 2000; Werch, Pappas, Carlson, & DeClemente, 2000), or samples mixing many geographic and regional areas (Bachman, et al., 1997), few have focused on the alcohol use of young adult women as this study does. Second, multiple roles in new combinations are assessed. Other studies have looked at the combination of the marriage or engagement and parenthood roles, or the roles individually as they affect changes in drinking amounts. This study separates out the effects of each role (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) in multiple combinations as well as paired associations.

Third, relatively little is known about the transition to young adulthood compared to other portions of the lifespan in relation to alcohol use (Jessor, Donovan, & Costa,
A great deal has been learned in recent years about the prevalence of alcohol use during this period (Chen & Kandel, 1995; Johnston, Bachman, & O’Malley, 1997), but studies about what factors (such as role assumptions) affect alcohol use that focus on the young adult transition period are rarer. Fourth, there is a critical need for studies that explicitly test associations between changes in roles and status and alcohol use. This study addresses these deficiencies in the research by determining factors that correlate with alcohol use in young adulthood with consideration given to young adult roles both individually, and in combination.

A further strength of the current study is that the data utilized was not retrospective. While participants did use self-report in the surveys, it is current self-report. The findings reported here make a contribution to the understanding of patterns of alcohol use and adult role assumptions in this sample of young adult women originally from a disadvantaged rural area.

**Limitations of the study**

1. The participants are all females aged 21 through 26 from a single rural Appalachian school district that were originally involved in a longitudinal study as adolescents, and continued to provide data into young adulthood.

2. The data reflect students’ and young adults’ self-reports of the variables being studied under the social and historical conditions present at the times of data collection.
3. Reliance on samples that are not representative of the general population limits generalization of results. This sample is from a rural background which was economically disadvantaged.

**Research Questions**

The following research questions were selected to address the issues identified in the study. The sequence of the variable testing was based on the strength of each variable to predict prevalence of drinking and binge drinking as indicated by the literature on young adult roles and alcohol use and is based on findings from numerous research studies indicating that the role of marriage or engagement is linked with decreases in alcohol use (Zucker, 1979; Bachman et al., 1997; Horwitz & White, 1991; Miller-Tutzauer, Leonard, & Windle, 1991). Marriage or engagement is given the highest priority in the order of entry of predictors, because it is expected to be the strongest predictor of decreased prevalence of alcohol use. The sequence of the remaining variables has also been based on previous research which indicates that the variables that have the strongest associations with decreased drinking after marriage or engagement are first parenthood, then fulltime employment, then current enrollment in postsecondary education, and then living independently. Controlling for age at the time of the survey:
1. What is the relative effect of specific two-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
   a. Marriage or engagement plus parenthood
   b. Marriage or engagement plus fulltime employment
   c. Marriage or engagement plus current enrollment in postsecondary education
   d. Marriage or engagement plus living independently

2. What is the relative effect of specific two-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
   a. Marriage or engagement plus parenthood
   b. Marriage or engagement plus fulltime employment
   c. Marriage or engagement plus current enrollment in postsecondary education
   d. Marriage or engagement plus living independently

3. What is the relative effect of specific three-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?
   a. Marriage or engagement and parenthood plus fulltime employment
b. Marriage or engagement and parenthood plus current enrollment in postsecondary education

c. Marriage or engagement and parenthood plus living independently

4. What is the relative effect of specific three-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?

a. Marriage or engagement and parenthood plus fulltime employment

b. Marriage or engagement and parenthood plus current enrollment in postsecondary education

c. Marriage or engagement and parenthood plus living independently

**Operational Definitions**

The following definitions of terms frequently used in the study are provided for the purpose of clarification.

**Age** - respondents’ age at the time of the survey.

**Binge drink** – defined for women as having four or more drinks in a row at one sitting (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994).

**Drink** – a “drink” is a 12 oz. bottle of beer, a 4 oz. glass of wine, a shot of liquor, or a mixed drink (Wechsler, Dowdall, Davenport, & Castillo, 1995).

**Fulltime employment** – the role of being employed fulltime.

**Living independently** – the role of living independently away from the family of
origin home, including one’s own apartment, college dorm or military.

**Marriage** – the role of being engaged, married, or remarried.

**Multiple Roles** – two or more roles which co-occur in young adulthood (e.g. engagement or marriage, parenthood, fulltime employment) (Bachman et al., 1997).

**Parenthood** – the role of being a parent and living with child(ren).

**Postsecondary education** – the role of currently attending post-high-school postsecondary education or technical training.

**Prevalence** – any past month use of alcohol (including binge drinking)

**Reward structure** - contains both positive and negative consequences of alcohol consumption; these consequences are supposed to vary for different social categories (Makela & Mustonen, 1996).

**Role** – a conventional societal expectation that most adults choose and integrate such engagement, marriage, parenthood, fulltime employment, and changing environments and demands such as living independently or the responsibility of current enrollment in postsecondary education (Clausen, 1991).

**Role assumption** – taking on a role along with its responsibilities and obligations (Brook, Richter, Whiteman, & Cohen, 1999).

**Role Selection** – a purposeful commitment to roles that agree with one’s alcohol use pattern (Yamaguchi, 1990).
Role Socialization – changing one’s alcohol involvement so as to make the behavior compatible with the expectations of one’s social roles (Yamaguchi, 1990).

Rural – U.S. Bureau of Census defines rural places or towns with less than 2500 inhabitants, as well as open country outside closely settled metropolitan/urban areas (Murray & Keller, 1989).

Young adulthood – ages 21 through 25 (SAMHSA, 2001).
Chapter 2

REVIEW OF THE LITERATURE

Theories

In the context of this study, it is relevant to consider theories to explain changes in alcohol use in young adulthood, young adult prevalence of alcohol use in the U.S., demographic factors including age and gender differences in alcohol use, the roles of marriage or engagement and parenthood and their effects on alcohol use, and finally the effects of enrollment in postsecondary education, fulltime employment, and living independently on alcohol use in 30-day occasions of drinking and prevalence of binge drinking for these young adult females.

Theories developed to explain the initiation of alcohol use in adolescence provide a number of plausible explanations for why the acquisition of adult roles would contribute to a decline in alcohol use. For example, social control theories (e.g., Hirschi, 1969; Gardner & Shoemaker, 1989) addressing environmental or structural influences such as neighborhoods, family structure, cultural values, or the availability of alcohol suggest that taking on conventional adult roles should be associated with commitments to conventional social institutions and behavior. The assumption of young adult roles was hypothesized to lead to a greater investment in and commitment to conventional social institutions including conformity to conventional expectations concerning alcohol use. Those who have particularly weak bonds to conventional social institutions show little
conformity to conventional expectations concerning use of alcohol (Jessor et al., 1991). These theories suggest that the most important influence on the changes associated with the assumption of adult roles is that 1) these changes lead to other changes in social influences, role models, learning opportunities, and reward structures, and 2) these new social influences more actively discourage use of alcohol.

More specific to the current study, adult roles clearly alter the physical and social settings in which individuals operate, that then alter the primary social interaction settings and opportunities for learning or modeling. These may lead to a cognitive reassessment of alcohol use and a reevaluation of the costs and benefits of alcohol use. In short, role changes are likely to be a pervasive influence on each of the major processes that alcohol use researchers have identified as important in the cause of alcohol use and abuse.

Although it is not be possible to disentangle all of these effects in the current research, it is possible to examine evidence for change at each of these levels. The existence of anticipatory effects for major role changes – that is, changes in alcohol use prior to the actual assumption of a new role (i.e. engagement) may also indicate the existence of internal or psychological processes in changing patterns of alcohol use. This indicates that the role itself does not necessarily precede the change in alcohol use.

**Role Theory**

Role theory concerns one of the most important features of social life; characteristic behavior patterns or roles. It explains roles by presuming that persons are members of social positions and hold expectations for their own behaviors and those of
other persons. Its vocabulary and concerns are prevalent among social scientists and practitioners, and role concepts have generated much research (Biddle, 1986).

Based on role theory, Kandel’s (1980) role incompatibility theory posits that entry into certain adult roles is associated with a reduction or slower rate of increase in alcohol use, in part because the demands of these roles may be incompatible with higher levels of drinking or binge drinking. For example, while there was not an actual decrease in frequency of binge drinking for those who were ever married, there was a more limited increase compared to their unmarried cohort members.

**Limitations of role theory**

In the case of multiple roles it is not clear that alcohol use trends attached to the individual roles should be applied. However, roles can be important, not in terms of role expectations and determinants of drinking behavior, but as constraints in choice situations that are related to drinking behavior. Several authors have stressed the importance of the connection between norms and drinking contexts (Simpura, 1991; Hajema & Knibbe, 1998). Norms in particular define the appropriateness of drinking in certain situations. In the Hajema and Knibbe study (1998) gaining the marriage role was found to decrease consumption. Hence, after one has gained the marriage role the desire to go to public drinking places decreases and this is only partly compensated by an increase in drinking at home. Therefore, the acquisition of the marriage role and probably the parenthood role can be seen as a constraint on drinking behavior.
In addition to role theory, a theoretical concept that shows potential is the “reward structure” of drinking behavior (Makela & Mustonen, 1996). In brief, the reward structure contains both positive and negative consequences of alcohol consumption and these consequences are supposed to vary for different social categories. If such a theory can indicate that social characteristics are important for the rewards and costs of drinking behavior then this theory can generate new hypotheses and give more insight into alcohol consumption as social behavior. In terms of reward structure, when certain adult roles are acquired there are more constraints on alcohol consumption. Consequently, it might be more rewarding to restrain drinking.

**Role Selection and Role Socialization**

Yamaguchi (1990) conducted a series of studies that analyzed relationships between use of alcohol and participation in family and fulltime employment roles. The life course characteristics of alcohol users were tendencies to avoid potential incompatibilities between use of alcohol and conventional family roles by two methods; role selection and role socialization. Role selection refers to a purposeful commitment to roles that agree with one’s alcohol use pattern, and role socialization refers to changing one’s alcohol involvement so as to make the behavior compatible with the expectations from one’s social roles.

Newcomb and Bentler (1987) focused on role socialization. They analyzed levels and changes in alcohol use as a function of living independently and “life pursuit” for young adults. They found that living with a spouse decreased alcohol use compared to
living alone. They also found that living with an unmarried partner generated the same pattern of changes in alcohol use, though the level of use was consistently higher than that of those living with a spouse.

This finding is consistent with that of Bachman, O’Malley, and Johnston (1984). The effects of having other life pursuits (i.e., various types of education and employment pursuits) were either modest or none. Thus, the findings from three studies, Yamaguchi (1990), Newcomb and Bentler (1987), and Bachman and colleagues (1997), based on role theory are largely consistent. In particular, these researchers commonly observed a socialization effect of marriage on reducing or stopping alcohol use.

**Social Control Theory**

Social control theory assumes that adolescents with problem behavior which departs from the regulatory norms of adult society (Jessor, et al., 1991) have poor relationships with others, and those adolescents with higher levels of attachment and commitment to and involvement with conventional persons and institutions are less prone to deviate from the norms of society (Hirschi, 1969; Kandel & Davies, 1991). In concordance with social control theory, research findings have suggested that commitment to family is an important deterrent to adolescent alcohol involvement (Kandel & Davies, 1991).

Several studies have shown that social bonding factors described by Hirschi (1969) in his social control theory, attachment to family, and commitment to job and education, inhibit problem behavior (Kandel & Davies, 1991; DeFronzo & Pawlak,
1993). Sex role theory and research suggest that traditional patterns of socialization are likely to have resulted in greater concern with social solidarity and thus social bonds among women than men.

**Young Adult Alcohol Use**

Rates of alcohol use and dependence are disproportionately higher among those between the ages of 18 and 29 compared with other age groups (Quigley & Marlatt, 1996; Johnston, et al., 1997; SAMHSA, 1997, 2001). The most important predictor of alcohol use following high school is alcohol use during high school. Given that much of the alcohol use after high school is predictable from senior-year alcohol use, it remains important to understand those shifts in use that may be attributable to post-high-school experiences:

1. Full time women postsecondary education students show larger than average increases in percentages of binge drinking.
2. Women who are fulltime homemakers show decreases in percentages of binge drinking.
3. Overall, total consumption of alcohol increases during the years following high school. (Bachman, et al., 1984).

A majority of young adult women (53%) report past month use of alcohol, making it (in statistical terms at least) normative behavior in this age group (SAMHSA, 2001). Most young adult women report only occasional use – typically once or twice a
week (Johnston, O’Malley, & Bachman, 1993). Though alcohol use shows considerable stability during the years after high school, there are some differences in trends in those who attend postsecondary education and those who do not.

Trends in postsecondary education students’ use of alcohol are quite different from the trends of non-postsecondary education respondents of the same age. From 1980 to 1993 postsecondary education students’ decrease in monthly binge drinking dropped only 4% in postsecondary education students (44% to 40%), whereas among non-college age-mates the decrease was 7% (from 41% to 34%) (NCADI, 1999). The postsecondary education students maintained close to earlier levels of binge drinking over this time period while their age-mates showed greater declines.

Young adulthood is a time of changing roles, responsibilities, and lifestyles. It is the period during which most individuals move from their parents’ homes, complete their education, enter the fulltime workforce, find partners, get married, and perhaps start families. Each of these roles moves them further from the experimentation and excesses of adolescence and closer to the realm of young adulthood. However, between adolescence and adulthood is a period that for some young people in our present-day society is marked by an increase in freedoms with relatively little increase in responsibilities. During this period, risk taking, such as alcohol abuse, tends to increase.

According to Arnett (2000), a primary reason that many individuals exhibit more risk-taking behaviors during this period is that they are exploring their identity and are not restrained by social roles such as marriage and parenthood. New social roles appear
to have an inhibitory effect on alcohol use, both in frequency and binge drinking. When taking on these adult roles, drinking appears to be more risky for young adults who begin to have more of a stake in society and a commitment to normative values (Hawkins, Catalano, & Miller, 1992a).

The time following graduation from high school is a period when life paths begin to diverge. Young adults must make many choices, including whether to further their education, what type of job they will take, and whether or when to start a family. Most of these choices take them away from roles that are familiar and into new arenas of life in which roles may be unclear. The new freedoms of this period, combined with the uncertainties that may come with unfamiliar roles, make this a time of experimentation and stress. Some young adults turn to the use of alcohol to cope with the stressors encountered during this time (Johnston, O’Malley, & Bachman, 2000; Johnson & Pandina, 2000).

**New Freedoms and New Responsibilities**

As young people leave high school and move into the new experiences of young adulthood, it is useful to look at the two directions of change: one involving new freedoms and the other involving new responsibilities (Bachman, O’Malley, Schulenberg, Johnston, Bryant, & Merline, 2002). The sequence experienced by most young adults is an opening up of new freedoms soon after completing high school, followed in most cases by the gradual assumption of an increasing number of new responsibilities. Most importantly, these responsibilities involve other people – fiancées, spouses, and children.
Commitments to postsecondary education or employment that really amount mostly to commitments to self may also matter; however they appear less central than the interpersonal factors in decreasing alcohol use. Also, living arrangement, whether in the original family home, in a roommate situation, or with a romantic partner, make a difference in the prevalence of alcohol use in young adulthood (Bachman et al., 2002).

The critical developmental change in young adulthood is characterized by an increase in new and demanding social opportunities and expectations. Plans regarding education and occupation, financial independence, living independently, or intimate relationships may be made prior to leaving high school, but the actual experience of young adulthood may be very different from initial expectations. Success or failure in each of these areas has important consequences throughout one’s life course (Clausen, 1991; Jessor, et al., 1991)

Along with roles that may continue across this period, as son or daughter, sibling, friend, and perhaps student, most adults must also choose and integrate the roles of fulltime employment, marriage and/or parenthood. In taking on these roles, new relationships and environments must be negotiated. Young adults face environments as varied as college campuses, dormitories, apartments with roommates, or the fulltime workplace. The roles of marriage and parenthood bring the challenge of negotiating entirely new kinds of intimate relationships. Such extensive change can be stressful and destabilizing. This may be especially true as the numbers of simultaneous role changes add up, reducing the remaining arenas of comfort – major areas of life in which one can
function easily and comfortably (Brooks-Gunn, 1987). While the stress of these changes may result in an increase in alcohol use for young adults with more freedoms and few responsibilities, the assumption of new responsibilities and roles has the opposite effect of reducing the use of alcohol, especially for those entering into marriage and parenthood roles.

The move from adolescence to young adulthood can be relatively discontinuous, however, with fewer familiar environments and tasks, and relatively little institutional structure (Hurrelmann, 1990, William T. Grand Foundation Commission. In Hawkins, et al., 1992). Considering these demands, perhaps it is not surprising that young adulthood is also a period of major risk for the onset and increase of alcohol abuse (Chen & Kandel, 1995).

**Changes in Alcohol Use**

It is a commonly held assumption that changes in major life roles or statuses occurring throughout the life course are critical in redirecting drinking patterns and problems. Specifically, changes in an individual’s life leading to more “stable relations” (e.g. getting married or fulltime employment) are thought to result in reductions in consumption of alcohol.

Most alcohol use in young adulthood does not reflect nearly as great a degree of habituation as in later years that leave alcohol use more susceptible to changes in role responsibilities and social environments. Alcohol is also more closely associated with social situations and is generally used with other people. Its essentially social nature may
make alcohol use more responsive to changes in the organization of social life and subject to greater social demands. Change and stability studies in alcohol related behaviors in young adulthood indicate that new immediate contexts (e.g., new school, new job, new home, marriage, and new living situation) emerge in young adulthood that can alter patterns of use or nonuse of substances.

Power and Estaugh (1990) studied factors that influence consumption patterns in young adulthood, in particular, those that result in binge drinking and those that have a moderating influence on consumption. In young adulthood, formation of stable partnerships as a part of maturation may moderate problem drinking and evidence from cross-sectional studies suggests that this influence extends through to older adults. Also, young adult roles involving an increase in the structure of everyday life were found to lead to a decrease in drinking (Neve, Lemmons, & Drop, 2000). Those who had reduced consumption by age 23 were more likely to have married. Among the single respondents, those who had plans for marriage within the year were most common in those who had maintained lighter drinking and in those who had reduced consumption, a trend that was consistent with higher rates of marriage in these groups. Women who were categorized as non- and infrequent-drinkers at age 23 were significantly more likely to have assumed family responsibilities than frequent, moderate or binge drinkers.

It has long been recognized that alcohol use tends to decline during the middle to late 20’s, about the same time when individuals typically assume roles related to marriage, parenthood, and fulltime employment, suggesting a relationship between the
successful assumption of young adult roles and decline in alcohol use (Bachman, Johnston, & O’Malley, 1981; Bachman, et al., 1984; Donovan, Jessor, & Costa, 1991; O’Malley, Bachman, & Johnston, 1984, 1988; Zucker, 1979, 1987). Among the possible reasons for this link, Kandel and Logan (1984; Yamaguchi & Kandel, 1985) suggested that alcohol use is incompatible with the responsibilities typical of normative young adult roles, and that the resolution of the dissonance is either through role socialization (i.e., decrease alcohol use) or role selection (i.e. avoid the incompatible role).

Jessor and associates (1991) suggested that the assumption of young adult roles has a “conventionalizing” influence, in which individuals become more conventional and thus less prone to problem behaviors. Although young adulthood may begin with more freedom than responsibility, the actual assumption of young adult roles is likely to involve the opposite – more responsibility than freedom. Simply the time and energy involved in many young adult roles is prohibitive of frequent and excessive drinking. Part of the explanation may lie in differential levels of functioning and adjustment in young adult roles, rather than simply assumption of the roles.

A number of longitudinal studies have followed young people from adolescence into young adulthood and looked at changes in alcohol use; these include the Youth in Transition study (Bachman, O’Malley, & Johnston, 1978; Johnston, 1973), and studies by Brunswick, Messeri, and Titus (1992), Jessor and colleagues (Donovan, Jessor, & Costa, 1991; Jessor et al., 1991), Kandel and colleagues (e.g., Yamaguchi & Kandel, 1985), Kaplan and colleagues (e.g., Johnson & Kaplan, 1991), Newcomb and Bentler (1987),
and Elliott, Huizinga, and Menard (1989). One consistent finding was that alcohol use tends to be lower after marriage.

Bachman and colleagues (1996) have found some systematic changes in alcohol use linked to post-high-school experiences. Analyses of the first three years following high school reveal that instances of binge drinking tended to decrease among those who were married, remained much the same (on average) among the unmarried women who continued to live in their parents’ homes, and increased among other unmarried women who left the parental home. (Bachman, Johnston, O’Malley, & Schulenberg, 1996).

Schulenberg’s research group (1996) found that there is evidence to indicate that marriage is associated with declines in alcohol use during young adulthood. In addition, given that many of the normative tasks and experiences in young adulthood relate to educational and occupational pursuits, it is possible that success or difficulty with these pursuits perhaps contribute to the differential patterns of problem drinking. Continued success in these pursuits may serve to deter excessive alcohol use by promoting investment in the future, institutional bonding, and an unwillingness to engage in activities that may endanger future success. Alternatively, extended difficulty or disappointment with educational or occupational pursuits, especially when coupled with lack of engagement in other young adult roles (e.g. marriage, parenthood), may contribute to increased problem drinking (Schulenberg, Wadsworth, O’Malley, Bachman, & Johnston, 1996). The Schulenberg (1996) study also examined how stability and change in binge drinking are associated with typical tasks and experiences involved in
moving from the normative roles of adolescence (e.g. student, part-time employment) to those of young adulthood (marriage or engagement, parenthood, fulltime employment). The findings were similar to alcohol use in general in young adulthood and indicated there were decreases in binge drinking when roles of young adulthood were assumed.

**Demographic Factors**

**Gender**

There is a need to study males and females separately when examining predictors of alcohol use. One reason for this includes the fact that women were found to experience alcohol-related problems at lower drinking levels than men even when body mass was controlled, perhaps because of gender differences in the metabolism of alcohol. This may also be due to the fact that men have a higher percentage of water content in their bodies than females, and therefore a greater capacity to dilute the alcohol ingested (Wechsler, et al., 1995).

General population surveys (e.g., National Institute on Alcohol Abuse and Alcoholism, 1993) have consistently reported that women are more likely to abstain from drinking and that women drinkers consume less alcohol than do their male counterparts. Some gender differences noted are that drinking differences between men and women pertain to social dimensions: women drink and first become intoxicated at a later age, more often drink at home, and consume wine rather than beer (Miller & Cervantes, 1997).
Age

Within the general population, alcohol consumption and binge drinking tend to be higher during the young adulthood years than at any other period across the lifespan. In fact, compared with other age groups, rates of alcohol use are disproportionately higher among those between the ages of 18 and 29 (SAMHSA, 1997; Quigley & Marlatt, 1996; Johnston, O’Malley, & Bachman, 1996). In young adulthood, age 21 is the peak prevalence for both 30-day alcohol use and binge drinking (NCADI, 1999). The prevalence of 30-day use was 66.6% for persons 21 years of age. More than 60 percent of persons age 21-25 report 30-day use of alcohol. After the early twenties binge drinking behavior appears to recede with age, as reflected by the 35% rate in the entire young adult sample (Bachman et al., 2002).

Young Adult Role Assumptions

As has previously been mentioned, it has long been recognized that binge drinking declines on average among individuals during their 20’s (Bachman, et al., 1981, 1984; Donovan, et al., 1991; Kandel & Logan, 1984; O’Malley et al., 1984, 1988; Zucker, 1979). Corresponding to the declines in use are increases in the proportions of young people who become engaged or married and who become parents. There are many factors that may mediate the association between social roles and alcohol use. For example, alcohol use is known to decrease when young adults get engaged or married and then increases again following divorce (Bachman et al., 1997; Leonard & Rothbard,
The research on social role assumptions is considered separately in categories of marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education and living independently in this section.

**Marriage or engagement**

Findings from national cross-sectional surveys, as well as numerous regional studies, indicate that engaged or married persons drink less than those who are separated, divorced or single (Harford, Hanna, & Faden, 1994). Such findings have led investigators to hypothesize that marriage moderates alcohol consumption (Zucker, 1979). Furthermore, the Temple, et al., (1991) meta-analysis of the typical quantity of alcohol consumed per occasion derived from 12 longitudinal data sets from North America and Europe revealed that becoming married was associated with decreased consumption, a finding that was consistent across the individual national studies. This suggests that shifts in roles leading to more stable relations in an individual’s life cause a decrease in consumption. In particular, the mutual caring and commitments associated with marriage, as well as the closeness and frequency of contact, may operate to reduce the likelihood of dangerous behaviors such as instances of binge drinking. Additionally, young married people tended to associate with other married couples rather than with singles, and these new and more adult associates may have less time and inclination to use alcohol – especially heavily.

Changes in alcohol use have been associated with the rate at which young adults formed their partnerships and families. Higher rates of marriage were observed among
those reducing consumption compared with those in whom consumption had increased. However, it is unclear whether the reduction preceded marriage or resulted from it.

Those planning to marry provide important evidence in this respect since they indicate that reduction begins before marriage. The moderating influence of a stable partnership that results in marriage, the assumption of the obligations and responsibilities associated with marriage, and the social expectations about appropriate adult and couple behavior, may themselves act as inhibitory factors to alcohol consumption.

(Bachman, et al., 1997).

Power and Estaugh (1990) and Miller-Tutzauer and colleagues (1991) showed that engaged individuals moderate their alcohol consumption prior to marriage and that this reduction continues into and stabilizes within the first year of marriage. These effects were similar for binge drinking women (Miller-Tutzauer, et al., 1991). Thus, marriage, although accompanied by numerous stresses and challenges, nevertheless provides protection from a host of physical and psychological problems. The protection provided by marriage extends to alcohol problems and alcoholism as well.

**Parenthood**

Becoming a parent is considered one of the most dramatic changes that occur during adult life, and its impact upon other life spheres is great. However, because most parents are also married, the alcohol effects of parenthood are confounded with marriage. In fact, some research has shown that many “effects” of parenting are better attributed to the influence of the marriage (Bachman et al., 1997; Burton, Johnston, Ritter, & Clayton,
1996; Gotham, et al., 1997). Some research supported similar effects for parenthood as for marriage (Waterson, Evans, & Murray-Lyon, 1990) and for single mothers negative correlations with levels of drinking were found that were similar to those for married mothers.

There are, however, some research findings on single parents and married parents that indicate that even unmarried mothers decrease their alcohol consumption. Bachman and colleagues (1997) reported that among married women, parenthood was associated with declines in frequency of alcohol use and that among single mothers, the multivariate coefficients for frequency of alcohol use were virtually identical to those for married mothers, suggesting that the effects of children present in the home may inhibit alcohol use.

Arnett (1998) found that decreased alcohol use among young adult parents is part of a pattern of overall reduced risk-taking behavior that occurs with getting married and starting a family. His research showed decreased binge drinking among parents. Little evidence was found for the theory that becoming a parent for the first time has substantial effects on instances of binge drinking. Multivariate analysis showed such differences to be mostly explainable in terms of other factors such as marriage and living independently. Therefore, this analysis showed some parenthood effects of decreased alcohol use, but the effects seem modest at best, certainly much smaller than the effects of marriage (Arnett, 1998).
Fulltime employment

Young adults who begin fulltime employment after high school tend to show very little change in 30-day alcohol use following high school, but an above-average decrease in binge drinking (Gotham, et al., 1997). Other studies have shown that leaving postsecondary education to begin fulltime employment is related to decreased alcohol consumption. Still other studies (Lahelma, Kangas, & Manderbacka, 1995) found fulltime employment not to be significantly related to frequency of drinking and intoxication. Those in fulltime civilian employment showed slight increases in proportions of current drinkers, and slight decreases in proportions reporting any binge drinking during the past 2 weeks. Also, frequency of intoxication decreased over the 3-year period studied for a sample of young men and women making the transition from postsecondary education to the fulltime workforce or further professional training (Chen & Kandel, 1995; Temple & Filmore, 1985-1986). Rates for current alcohol use were 57 percent for adults who were employed fulltime adults aged 18 and older in 2000 (SAMHSA, 2001) compared to 49 percent of their unemployed peers.

Fulltime employment and marriage, but not parenthood, were found to be related to alcohol involvement during the transition from postsecondary education. Fulltime employment was related to decreased drinking (Gotham, et al., 1997). Findings support Kandel’s (1980) role socialization hypothesis that adoption of a role incompatible with binge drinking leads to a reduction in alcohol involvement. In a similar study, those who were currently employed had a sharper increase in prevalence of binge drinking in young
adulthood (Vicary, Crockett, & Jackson-Newsom, 1998). This is in contrast to Kandel’s theory. Possible explanations include the availability of money because of employment; a job culture that supports drinking; or an increased social group available as a result of being in the world of fulltime employment. Drinking may not thus be incompatible with employment.

In conclusion, entering the fulltime workforce may be associated with decreases in alcohol involvement, however, there is evidence that this relationship is complex and that chronic unemployment (Temple et al., 1991), job stress, opportunities for drinking on the job (Wilsnack & Wilsnack, 1992), or early employment (Power & Estaugh, 1990) might be better predictors of alcohol use than more normative employment in young adulthood.

**Current enrollment in postsecondary education**

Approximately half of the adolescents in the United States go on to some form of postsecondary education after completing high school (Grant, Harford, & Grigson, 1988). Going on to postsecondary education tends to greatly enhance opportunities for employment, in addition to slowing the passage to young adulthood. Because adolescents typically leave school before beginning fulltime employment, marriage or starting a family, current enrollment in postsecondary education may represent an opportunity to postpone the assumption of full adult responsibilities while continuing to learn and pursue personal and academic interests (Maggs, in press). During this time, individuals may experiment with various adult behaviors, values and lifestyles in a safe
environment. The National Household Survey on Drug Abuse (NCADI, 1999) reported that among persons 18 to 25 years of age, past month alcohol consumption was most prevalent among persons with current enrollment in postsecondary education (74% ) compared to 64.7% of persons with some postsecondary education, 53.8% of those with only a high school diploma, and 46.1% in this age group who lacked a high school degree. A similar pattern of increasing rates with increasing educational attainment was seen for binge drinking ranging from 34% among persons who had not completed high school to 43% of those with postsecondary education.

One of the most important aspects of life in postsecondary education is that it often involves leaving the parental home and moving to a dormitory or other student-housing situation. Also, relatively few postsecondary education students are in the role of marriage or engagement. In other words, those young adults who are living independently and also currently enrolled in postsecondary education are found to increase alcohol use, and this suggests that what at first may appear to be simply current enrollment in postsecondary education effects may be explainable in terms of living independently.

Multivariate regression analyses have indicated that indeed this is the case; once living independently is entered into the equation, there is little remaining effect that could be attributed to something unique about the student role (Bachman et al., 1997). The most appropriate causal interpretation is that current enrollment in postsecondary
education has indirect effects on alcohol use, because it influences living independently (including marriage) that in turn have more direct effects on alcohol use.

In sum, the analyses summarized here suggested that current enrollment in postsecondary education and living independently were among the most important factors influencing changes in alcohol use, at least during the first few years after high school. Current enrollment in postsecondary education plans had an indirect positive effect on post-high-school alcohol use, and this effect operated largely via post-high-school experiences – that is, compared to their classmates, those with plans for postsecondary education in high school were more likely to increase their alcohol use after high school because they were more likely to be postsecondary education students living in dormitories and roommate living situations with more freedoms, and less likely to be married (Bachman, et al., 1997).

**Living independently**

Young adulthood is a major time change during which young adults may move away from their parents’ home to begin postsecondary education, and may initially live in a student residence. This involves at least two major role changes: the transformation from being a child living at home to an independent person living alone, with others, or on or near a postsecondary education campus, and from being a high school student to a student of postsecondary education. It is important to recognize that the most important role adjustment for many who go on to post-high-school education involves changes in living independently – moving out of the parental home and perhaps into a dormitory.
Furthermore those in fulltime post-high-school education are relatively unlikely to experience simultaneously the role of fulltime “adult” employment (Bachman et al., 1984). In other words, educational experiences are heavily confounded with living independently and employment experiences.

Bachman, O’Malley and Johnston (1984) found that post-high school living independently influenced alcohol use. Those who continued to live with their parents showed little or no change in their alcohol use as compared to alcohol use in high school. Their alcohol use does increase during young adulthood, but this increase is lower than what is expected for members of this age group. However, among those who moved out the parental home, those who married showed a decrease in use, those living with a partner of the opposite sex showed some increase in alcohol use, and those who entered other living arrangements (including dormitories) also showed an increase in use (Harford, Wechsler, & Muthen, 2002).

Comparing alcohol use by young adults living alone with use by those living with their parents showed that those who live alone are more likely to increase their alcohol use (Bachman et al., 1997). Among adults living alone (and not in a dormitory) the proportions of current alcohol users and prevalence of use increased more than average, although not as much as among those who lived in dormitories. Instances of binge drinking were found to be roughly average among those living alone (Bachman et al., 2002).
Cohabitation is similar to marriage in that it involves living with an intimate partner, however the two groups show different patterns of alcohol use, and findings have indicated both selection effects and also socialization effects (Bachman et al., 2002). Before leaving high school, young people who would later become cohabitants were much more likely than average to drink and drink heavily (Bachman, et al., 1984; Bachman et al., 1997). This may reflect lower traditionalism and higher deviance among young people who later choose to cohabit outside of marriage (Newcomb & Bentler, 1987; Thornton, Axinn, & Hill, 1992; Yamaguchi & Kandel, 1985). On the other hand, among engaged cohabitants, there are declines in alcohol use that appear to be weaker versions of the marriage effects (Bachman et al., 1997). Among those cohabiting, being engaged is associated with a reduction in drinking. The effect is not as large as the marriage effect, but it is actually larger than the decline in binge drinking among those who were engaged but not cohabiting.

Currently enrolled postsecondary education students are more likely to increase their prevalence of alcohol use and binge drinking than their age-mates who have not gone on to postsecondary education, and the explanation may lie in the fact that they are more often living independently. In particular, current enrollment in postsecondary education students are less likely than average to marry in the first few years after high school, but they are more likely than average to leave their parents’ homes. These kinds of living situations appear to contribute to increased alcohol use. In particular, the substantial increases in binge drinking associated with living in a dorm or in other
arrangements remain evident, as do the substantial decreases associated with being married.

It is a relatively simple matter to focus specifically on living independently, and much more complicated to examine either student role or employment role among young people just after high school, because the two dimensions are closely related. Thus, for example, a fulltime student has a low (but not zero) likelihood of also being employed fulltime. Among those living with a spouse, the proportion reporting any instances of binge drinking during the past two weeks is about 12% smaller than during the senior year, whereas among those living away from the parental home (but not with a spouse or partner of the opposite sex) the proportion is about 12% greater than during the senior year (Bachman, et al., 1984).

In summary, multivariate analyses support the following interpretations of age-related changes in alcohol use: The increase in alcohol use between ages 18 and 22 resulted mainly from new freedoms in living independently on leaving parents’ homes and moving into dormitories or dormitory-like housing shared with other young adults, as well as the freedom to purchase alcohol at age 21. The reductions in alcohol use between ages 22 and 32 largely reflect the impacts of new responsibilities associated with marriage and parenthood (Bachman et al., 2002)

Multiple Roles

Marriage or engagement, parenthood, and fulltime employment are some of the most powerful role transitions that typically define the assumption of young adulthood.
These events involve commitments to new roles and responsibilities that usually extend over many years, changing both the physical and psychological life situations of the individual. New roles and responsibilities may involve many changes in social contexts, often including new living independently, new neighborhoods and neighbors, new sets of friends and acquaintances (Bachman, et al. 1997).

Multiple roles, in other words roles that co-occur such as marriage or engagement, parenthood, and fulltime employment, were expected by Bachman and colleagues (1997) to be accompanied by a reduction of the psychological need to use alcohol and by an increase in social monitoring and social control of drinking. Multiple roles would leave less opportunity for drinking and probably less behavioral impairment. The loss of roles means more drinking opportunities, fewer restrictions on drinking behavior, greater importance of role-relationships that require drinking and drinking as a coping behavior for the stress of role deprivation. There is an overlap between the effects of marriage or engagement, pregnancy and parenthood on amount and frequency of alcohol use. This overlap may be interpreted as either, 1) parenthood may not have an influence above and beyond marriage or engagement because individuals who are likely to change their substance use behavior in response to parenthood have already done so in response to marriage or engagement, or 2) it is possible that some of the observed marriage effect reflects the anticipation of parenthood.

Hajema and Knibbe (1998) assumed that binge drinking would be incompatible with the fulfillment of roles such as marriage, parenthood or fulltime employment.
Hence a decrease in consumption and prevalence of binge drinking was expected from acquiring roles. Those who assumed roles of fulltime employment, marriage or parenthood were expected to decrease alcohol consumption and binge drinking. An increase in alcohol consumption or prevalence of binge drinking was predicted for those who had lost their fulltime employment, marriage or parenthood role. Findings for women were that the influence of gaining a spouse appeared to be a role in decreasing alcohol use, and associations of acquiring the marriage role with both alcohol consumption and binge drinking among women were significant. Parental role was in the expected direction although not significant. Among women, those who got married decreased consumption compared to those remaining single (Hajema & Knibbe, 1998).
Chapter 3

METHOD

Included in this chapter are descriptions of the research design, data collection procedures, sample, measures, and data analysis plan. While the literature in general shows an inverse relationship between assumption of adult roles and prevalence of drinking and binge drinking, little has been published on the effect of multiple roles on alcohol use in young adulthood. Therefore, the purpose of this study is to determine whether lower levels of alcohol use and/or binge drinking are related to higher levels of engagement in multiple adult roles for a sample of young adult women.

Research Design

This study will use a cross-sectional research design, using measures of association from one time of measurement of young adult women. These women were between the ages of 21 to 26 and participated in the Rural Young Adult Transition Study (RYATS) that was conducted in 1995. This one time of measurement was the eighth of an ongoing longitudinal study examining health and developmental issues for youth during adolescence and young adulthood. The original study began in 1985 and was conducted in one rural Northern Appalachian school district. The total project included the Rural Adolescent Development study (RAD; funded by the Office of Adolescent
Pregnancy Prevention Programs (OAPP), Dr. Judith R. Vicary, Principal Investigator),
the Rural Young Adult Transition Study (RYATS; funded by the National Institute on
Alcoholism and Alcohol Abuse (NIAAA), Dr. Lisa J. Crockett, Principal Investigator,
Dr. Judith R. Vicary, Co-principal investigator) and the Evaluation of Rural Outcomes of
Sexuality (EROS; funded by the Office of Adolescent Pregnancy Prevention Programs
(OAPP), Dr. Judith R. Vicary, Principal Investigator).

The original adolescent study was a prospective cohort-sequential design of three
cohorts of young adolescents, with school board and administration approval, asked to
participate in an annual survey. Students in grades 7, 8, and 9 in 1985 were assessed each
year in the fall for six years, through the end of high school, with a last survey sent to the
ninth grade class following their graduation. Of the eligible female students at survey 1,
96% participated in the study. At each year of school data collection, 90 to 95% of
eligible students participated. Members of each cohort, both men and women, also
participated in the RYATS data collection in 1995. The women represented 94% of the
original adolescent female longitudinal sample from the Rural Adolescent Development
study (RAD). The female segment of the longitudinal sample had been identified as
those who had missed no more than one time of measurement during the RAD
assessments (junior and senior high school).

Community

The participants in the study were a convenience sample, originally all junior high
school students, of one rural school district located in the upper Allegheny Range of the
Appalachian Chain in the Eastern U.S. All participants were Caucasian and living in a geographically isolated rural area. The school district serves communities geographically contained within an approximately 25-mile diameter and situated in two counties. It includes a number of small boroughs and townships, including seven municipalities, and is three to four hours from any large urban area. Its residents are almost exclusively white, low to low-middle income, and of European descent. Many families came to the area three to four generations ago to work in the then substantial mining industry, and communities grew and developed around this and related employment. It has been a stable locale, with the majority of the participants in this study reporting that their parents, or grandparents, had attended the same local schools, although many did not graduate from high school.

Employment in the extracting industries, such as mining and lumbering, had initially drawn the population to this area, and the community developed around these residents. However, beginning in the early 1980’s severe economic stress nationally and regionally resulted in employment losses in these areas, among others. In 1987, unemployment was reported at 19.6% in the region as a result of the economic problems. This is reflected in Cordes’ (1989) research findings that rural America is vulnerable to economic structure change and downturn as much or more so than urban and suburban areas due to limited alternative resources and employment opportunities as well as the lack of public transportation and poor roads.
Census data from 1980, the closest census to the year when the original study began, showed that grade school was the highest level of education for 25% of area adults, while 44% completed high school and 7% completed postsecondary education. At that period more than 20% of 8th graders scored below the national cutoff for remedial classes in reading and 25% were below the cutoff in math. Partially reflected in these figures may be the district’s economic and educational deprivation at the start of data collection. Census data from 1990 for this community showed an increase to 65% that had completed high school, and an increase to 9% who were college graduates (The Pennsylvania State Data Center, 1996)

Sample

The sample utilized for this study consisted of 249 women from the RYATS study that is a convenience sample based on those participants from the earlier adolescent data collection who responded to a request to participate in a follow-up survey and interview. These respondents ranged in age from 21 to 26, with a mean of 23 years of age, and standard deviation of 1.05. These women represented 94% of the original adolescent female longitudinal sample from the Rural Adolescent Development study (RAD). The female segment of the longitudinal sample had been identified as those who had missed no more than one time of measurement during the RAD assessments (junior and senior high school).

Demographic characteristics. The current study uses only data from the women surveyed for the RYATS study, although men were also assessed at that time. Forty-one
percent of the women in the RYATS sample were married, 14% were engaged, 4% were
divorced or separated, 40% were single, and 1% were remarried. Thirty-four percent of
the women reported having children. In relation to employment, 68% of the women were
employed either part-time or fulltime; 11% were fulltime homemakers; and the remaining
16% were unemployed, laid off, or were on maternity/sick leave from employment. The
level of education varied for the women: 6% finished some high school only; 6%
completed their GED; 27% had graduated from high school; 12% had technical training
after high school; 20% had some postsecondary education; 26% graduated from
postsecondary education; and 3% had some graduate or professional training. In terms of
living independently, 56% were either married, or living with a romantic partner; 20%
were living with parents, stepparents, or in-laws; 9% were living with roommates, and
6% lived alone. Seventy-nine percent of the women lived in geographically rural areas at
the time of measurement (1995); the remaining women lived in suburban areas (7%),
urban areas (12%) and on military bases (1%). Of these women 63% reported that they
had had a drink in the past 30 days, and 43% reported that they had engaged in binge
drinking in the past 30 days.

Procedure

In 1995, all former RAD survey participants were contacted about another data
collection. They were then mailed surveys to be completed and returned to the project. A
letter that explained the follow-up study and invited them to participate. The letter was
followed by a phone call to obtain verbal consent. Standard informed consent procedures
were followed. The participants were informed about the study, both orally and in writing, and had the opportunity to ask any questions. They were told they had the right to withdraw at any time.

Procedures were employed to track hard-to-find participants including contacting directory assistance, relatives, and people previously identified as individuals who would know the participants’ whereabouts. In addition, tracking procedures included BIGFOOT (an Internet people search tool), telephone directories listed on the Internet, a contact person from the original school district, and asking participants who were interviewed toward the end of the data collection if they knew the whereabouts of particular individuals who had been their classmates. During the time of tracking and contact letters, project staff were given intensive interview training which included an overview of the project background, research procedures, interview protocol, demonstrations, practice sessions, feedback and a final evaluation based on role playing an interview.

The 98-item survey, which took respondents approximately one hour to complete, assessed educational experiences, fulltime employment experiences, romantic partnerships, parenting, psychological adjustment, substance use, and sexual experiences. Once again, confidentiality was ensured by the use of numeric code numbers on surveys and interviews rather than names. Participants were offered a monetary incentive to complete the survey, and reminder postcards were sent to those who had failed to return the survey within two weeks.
Measures

Demographic Variables

Demographic variables assessed in the survey and used in the present study included gender and rural status. An item that asked where the participant lived at the time of the survey assessed rural status. Originally, all participants from the one school district were considered rural; in 1995 the status of 21% of the participants had changed. Response choices were 1="rural farm area,” 2=”rural non-farm area,” 3=”small town,” 4=”suburb of a city,” 5=”city/urban area,” or 6=”military facility.” One item was used to assess gender: “What is your gender? Female=1 or Male=2.” For this study, only female data were utilized.

Dependent Variables

Measures of Alcohol Use. One item was used to assess the occasions of alcohol use in the past 30 days, and another measure that contained two items assessed the prevalence of binge drinking in the past 30 days. The first item was taken from the Primary Prevention Awareness, Attitudes, and Usage Scale (PPAAUS) developed by Swisher, Shute, and Bibeau (1984; Swisher, 1982), and measured the number of occasions when the respondent had had a drink in the past 30 days. This alcohol use was assessed by the question, “On how many occasions, if any, have you had alcoholic beverages during the past 30 days?” There were seven response choices: 1 = “never,” 2 = “1-2 times,” 3 = “3-5 times,” 4 = “6-9 times,” 5 = “10-19 times,” 6 = “20-39 times,” 7 = “40+ times.” ( A “drink” is a bottle of beer, a glass of wine, a wine cooler, a shot of
liquor, or a mixed drink.) This item was then dummy coded as 0=no occasions of drinking in the past 30 days, or 1=one or more occasions of drinking in the past 30 days.

Prevalence of binge drinking, the two-item alcohol use measure used in the present study, was taken from the Five/Four Binge Drinking Scale developed by Wechsler and colleagues (1994). Binge drinking is defined for women as having four or more drinks in a row (Wechsler, et al., 1994). The first item asked participants to, “Think back over the past 30 days. How many times have you had five or more drinks in a row? (A ‘drink’ is a bottle of beer, a glass of wine, a wine cooler, a shot of liquor, or a mixed drink.)” There were six response choices: 1 = “never,” 2 = “once,” 3 = “twice” 4 = “3-5 times” 5 = “6-9 times” 6 = “10 or more times.” A second item asked, “During the last 30 days how many times have you had four drinks in a row (but not more than that)?” and used the same six response choices. Choosing which of these two questions would be used to assess binge drinking was challenging since the actual definition for binge drinking in women is having 4+ drinks on one occasion. The responses to each of the two questions were coded either never, or one or more occasions and then added together, so that both responses were utilized. The final result was dummy coded as follows: 0=no occasions of binge drinking in the past 30 days, or 1=one or more occasions of binge drinking in the past 30 days.

**Independent Variables**

**Marriage.** Two items were used to assess marriage. Responses to the first item, “What is your present marital status?” included married, engaged, divorced, separated,
widowed, single, and remarried. The second item was, “Are you currently living with a fiancé or girlfriend/boyfriend?” Responses were dummy coded as 0=not presently married or engaged, or 1=married, engaged, or remarried and this variable was called marriage.

**Parenthood.** Two items assessed parental status. The first item was, “How many of your natural children live with you?” (answers 0, 1, 2, 3, …) and the second was, “Do other children live with you?” Responses were dummy coded as 0=no children living with the respondent, and 1=one or more children living with the respondent and this variable was called parenthood.

**Fulltime Employment.** One item was used to assess fulltime employment. It asked “What is your current employment situation?” Possible responses included: employed part-time, employed fulltime, laid off, unemployed but looking for fulltime employment, unemployed and not looking for fulltime employment, on sick leave, maternity leave, or parental leave, and fulltime homemaker, or other. Three levels of responses were identified as 0=not fulltime or homemaker, 1=fulltime employment, or 2=homemaker. These were then dummy coded using level 0 as the reference group as 0=levels 0 and 1, or 1=levels 0 and 2. This variable was called fulltime employment.

**Current enrollment in Postsecondary Education.** Current enrollment in postsecondary education as a role was assessed with one item, “Are you currently enrolled in an educational program?” Responses were dummy coded as 0=not currently
enrolled in an educational program, or 1=currently enrolled in an educational program.

This variable was called current enrollment in postsecondary education.

**Living Independently.** Assessment of living independently was made by an item that asked, “Who do you live with most of the year?” Possible responses included: I live alone, I live with: natural mother, natural father, stepmother, stepfather, brother(s) and/or sister(s), foster parent(s) or guardian, my wife/husband, roommate(s), military, my children, my in-laws, my boyfriend/girlfriend’s family, grandparent(s) or other relatives, or other. Responses were dummy coded as 0=live with members of family of origin (including stepparents, grandparents, foster parents, and partner’s family), or 1=live independently (including live alone, military, with roommates, or with new family such as spouse and own children). This variable was called living independently.

**Control Variable**

One control variable was used in this study; age at the time of the survey. To assess this, one item was used; “What is your age? ____ years old.” This control variable had responses ranging from age 21 to age 26 with a mean of 23 years and standard deviation of 1.05.

**Research Questions**

The following research questions were selected to address the issues identified in the study. Controlling for age at the time of the survey:
1. What is the relative effect of specific two-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
   a. Marriage or engagement plus parenthood
   b. Marriage or engagement plus fulltime employment
   c. Marriage or engagement plus current enrollment in postsecondary education
   d. Marriage or engagement plus living independently

2. What is the relative effect of specific two-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
   a. Marriage or engagement plus parenthood
   b. Marriage or engagement plus fulltime employment
   c. Marriage or engagement plus current enrollment in postsecondary education
   d. Marriage or engagement plus living independently

3. What is the relative effect of specific three-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?
   a. Marriage or engagement and parenthood plus fulltime employment
b. Marriage or engagement and parenthood plus current enrollment in postsecondary education

c. Marriage or engagement and parenthood plus living independently

4. What is the relative effect of specific three-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?

a  Marriage or engagement and parenthood plus fulltime employment

b. Marriage or engagement and parenthood plus current enrollment in postsecondary education

c. Marriage or engagement and parenthood plus living independently

**Analysis**

This section will present the strategies for data analysis of women’s young adult roles and alcohol use. The results of the analysis will be presented in Chapter 4.

**Statistical Analysis**

To test each of the research questions, the difference in the log-likelihood ratio will be used which will measure the joint effect of specific multiple role variables on drinking behavior. A likelihood-ratio test evaluates each predictor by testing the improvement in model fit when that predictor is added to the model or, conversely, the decrease in model fit when that predictor is removed. (Tabachnick & Fidell, 2001).
The primary measure of association will be odds ratio (OR). The latter will indicate the relationship between the variables and whether the combination of role variables is a protective or risk factor for drinking or binge drinking. Models will be fit using SPSS 11.01 (Norusis, 2002).

<table>
<thead>
<tr>
<th>Step</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Depvar = Age + Mar/eng + Parenthood</td>
</tr>
<tr>
<td>1</td>
<td>Depvar = Age + Mar/eng + Fulltime employment</td>
</tr>
<tr>
<td>1</td>
<td>Depvar = Age + Mar/eng + Cur/postsec</td>
</tr>
<tr>
<td>1</td>
<td>Depvar = Age + Mar/eng + Living independently</td>
</tr>
<tr>
<td>2</td>
<td>Depvar = Age + Mar/eng + Parenthood + Fulltime employment</td>
</tr>
<tr>
<td>2</td>
<td>Depvar = Age + Mar/eng + Parenthood + Cur/postsec</td>
</tr>
<tr>
<td>2</td>
<td>Depvar = Age + Mar/eng + Parenthood + Living independently</td>
</tr>
</tbody>
</table>

Notes: Depvar = Dependent variables (drink or binge drink over the past 30 days) Mar/eng = Marriage or engagement Cur/postsec = Current enrollment in Postsecondary Education

A total of 14 models will be fit ranging from three to four variables in each model controlling for age (see Table 1). The consequences implied in this model fitting of a Type I error, or concluding incorrectly that two variables are related when they are not,
are great due to the number of tests proposed. However, as this study is largely exploratory in nature, there will not be an attempt to control the Type I error rate.

Logistic regression analysis was chosen for several reasons. First, it allows estimation of the effect of an independent variable on a dependent variable while controlling for the influence of other variables in the model. Logistic regression is appropriate when the outcome variable is dichotomous, such as in prevalence of alcohol use in the past 30 days and prevalence of binge drinking in the past 30 days (Afifi & Clark, 1996). In the final model, the information gained from simultaneous analysis for all the independent variables is more complete than individual analysis would yield (Cohen & Cohen, 1983).

Another advantage of logistic regression analysis is that it can be driven by the researcher’s theoretical model, and can test his or her hypotheses, revealing associations consistent with a set of causal relations. Interpretation of the results involves testing the consistency of the data with the theoretical model. If the model holds we will then be in a position to infer that drinking behavior is affected by certain young adult roles and/or roles in combination. If the data are indeed inconsistent, the theory that generated the hypothesis is under question. If there is consistency of the data with a hypothesis, it is not proof of the theory; it only lends support to it. In the event that the logistic regression model is not normally distributed, as assessed by a plot of the data, the data will be normalized.
Drinking behaviors are assessed with respect to two dichotomous dependent variables: 1) prevalence of alcohol use, and 2) prevalence of binge drinking. Marriage or engagement is given the highest priority in the order of entry of predictor variables because it is expected to be the strongest predictor of decreased prevalence of alcohol use. The sequential process then asks if parenthood, fulltime employment, current enrollment in postsecondary education, or living independently adds to the prediction of decreased use of alcohol beyond that of marriage or engagement. Controlling for current age, logistic regression will be used to obtain the odds ratio between the role assumption(s) and drinking behavior. A likelihood ratio test will be then used to determine if the adjusted odds ratio is significant from zero.

The first two research question sets, considering two-role combinations, reflect the hypothesis that adding either the role of parenthood, fulltime employment, current enrollment in postsecondary education, or living independently to the role of marriage or engagement will predict a lower prevalence of drinking and binge drinking in the past 30 days compared to the single role of marriage or engagement. The equations will be:
Logit\(Y_1\) = \(b_0 + b_1(\text{age}) + b_2(\text{marriage or engagement}) + b_3(\text{role variable})\) and

\(01\)

Logit\(Y_2\) = \(b_0 + b_1(\text{age}) + b_2(\text{marriage or engagement}) + b_3(\text{role variable})\)

\(02\)

where \(Y_1\) = drinking and \(Y_2\) = binge drinking and the logit is the log odd of the probability that \(Y_1 = 1\) or \(Y_2 = 1\).

Thus, four combinations (see Table 1) would be run twice in step one (once for each dependent variable) resulting in eight total equations. The sequence of adding the role variables is based on findings from numerous studies indicating that the role of marriage or engagement is linked with decreases in alcohol use (Zucker, 1979; Bachman et al., 1997; Horwitz & White, 1991; Miller-Tutzauer et al., 1991) as discussed in Chapter 2. Marriage or engagement is given the highest priority in the order of entry of predictors because it is expected to be the strongest predictor of decreased prevalence of alcohol use. The sequence of the remaining variables has also been based on previous research which indicates that the variables that have the strongest associations with decreased drinking after marriage or engagement are first parenthood, then fulltime employment, then current enrollment in postsecondary education, and then living independently.
The third and fourth questions, considering three-role combinations, reflect the hypothesis that adding either the role of fulltime employment, current enrollment in postsecondary education, or living independently to the combined roles of marriage or engagement, and parenthood will predict a lower prevalence of drinking and binge drinking in the past 30 days. Here the combined roles of marriage or engagement and parenthood are given the highest priority since this combination is expected to be the strongest predictor of decreases in alcohol use. The equations here will be:

\[
\text{Logit}(Y_1) = b_0 + b_1 \text{(age)} + b_2 \text{(mar/eng)} + b_3 \text{(parenthood)} + b_4 \text{(role variable)}
\]

(03)

\[
\text{Logit}(Y_2) = b_0 + b_1 \text{(age)} + b_2 \text{(mar/eng)} + b_3 \text{(parenthood)} + b_4 \text{(role variable)}
\]

(04)

Thus, three combinations (see Table 1) would be run twice in step two (once for each dependent variable) resulting in six total equations. The sequence is based upon research results indicating that the combined roles of marriage or engagement and also parenthood decrease alcohol use (Bachman et al., 1997; Burton, et al., 1996; Gotham et al., 1997, Waterson et al., 1990; and Arnett, 1998). As each of the independent variables (fulltime employment, current enrollment in postsecondary education, and living
independently) is sequentially added to the equation, if the change in adjusted odds ratio differs significantly, it will lend support to the hypothesis that those multiple roles add to the prediction of decreased prevalence of drinking and binge drinking in this sample of married or engaged young adult women.

Summary

This chapter outlined the methods for conducting this study. Descriptions of the research design, methods for conducting the study, school district and community, sample, survey instruments, and statistical analyses were presented. The results of the study are presented in Chapter 4. A summary of the results of the study and discussion of the research findings, conclusions based on the findings, recommendations for further research, and implications of the results for counseling and prevention programs are provided in Chapter 5.
Chapter 4

RESULTS

The purpose of this study was to determine whether the prevalence of drinking and binge drinking is related to engagement in multiple adult roles among a sample of women in young adulthood. In addition, the relative importance of the various components of roles (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) was analyzed in order to provide more detailed information regarding implications for counseling and prevention approaches. In this chapter, the findings related to each of the research questions are presented. Results were based on analysis of the survey responses of 249 women aged 21 through 26 during the fall of 1995.

The following research questions will be addressed in this chapter.

1. What is the relative effect of specific two-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
2. What is the relative effect of specific two-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?

3. What is the relative effect of specific three-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?

4. What is the relative effect of specific three-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?

Background Data

The results of this study are based on the analysis of data collected from a survey administered in the fall of 1995 as part of a Rural Young Adult Transition Study (RYATS; funded by the National Institute on Alcoholism and Alcohol Abuse (NIAAA), Dr. Lisa J. Crockett, Principal Investigator, Dr. Judith R. Vicary, Co-principal investigator). The self-report survey assessed a variety of factors related to young adult development and substance use.

Missing Data

Respondents who completed all of the relevant sections of the survey were included in the final analysis. For each analysis, using SPSS 11.01 (Norusis, 2002),
list wise deletion was used which yielded analysis on only those respondents who had completed the items necessary for that analysis. The total number of respondents was $n=249$; however, up to 12 respondents were deleted for some of the analyses.

**Initial Analyses**

Due to the fairly small sample size in this study ($n=249$), some exploratory analyses were run initially to determine whether there would be a sufficient number of participants in specific categories to warrant further analyses. These results will be presented first as they contain information regarding the significance of the individual variables which is essential for comparisons with multiple roles to be made. In addition, the variable definitions presented in Methods were in part influenced by these analyses and with the necessity to have sufficient numbers of participants in order to avoid errors in the analyses. The research questions, all of which stipulate multiple role analyses, will be presented next in the sequence specified in Chapter 3 and findings for each will be shown in tables and text.

Descriptive statistics of the dependent variables, drinking over the past 30 days (drink), and binge drinking over the past 30 days (binge), revealed that in this sample 63% of the women have had a drink in the past 30 days, and 43% of the women have engaged in binge drinking in the past 30 days. Frequency counts were run on each of the five independent role variables (marriage or engagement,
parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) and the two dependent variables, drinking and binge drinking (see Appendix A). This analysis revealed sufficient numbers of participants in all of these single dichotomous variables. Further frequency tables were generated including missing data for all of the independent variables in both categories of drinking and binge drinking (See Appendix B). These indicated sufficient numbers of respondents in the two-role combinations that were being tested according to the research questions, with the exception of the category of living independently, where there were zero respondents who were married or engaged and living at home. For example, 59 respondents had the dual role of marriage or engagement plus parenthood. Of these, 44 indicated no binge drinking, 15 indicated yes to binge drinking in the past 30 days, 31 reported no drinking, and 24 reported drinking in the past 30 days. Similarly 59 respondents indicated having the dual role of marriage or engagement plus fulltime employment, with 35 reporting no and 24 reporting yes to binge drinking in the past 30 days, while 23 reported no to drinking and 33 reported yes to drinking in the past 30 days. For the dual role of marriage or engagement plus current enrollment in postsecondary education, there were lower numbers since there were only a total of 43 respondents who indicated that they were currently enrolled in postsecondary education. Therefore this yielded 8 in the no category and 7 in the yes category of drinking, and 13 in the no category and 5 in the yes category of binge drinking in the past 30
days. For the dual role categories compared to single roles (research questions 1 and 2), these numbers were high enough to warrant analysis on groups with these particular characteristics.

Examination of the frequencies for three-role variables revealed lower numbers of subjects in the category of marriage or engagement plus parenthood plus current enrollment in postsecondary education. Research questions 3 and 4 stipulate comparisons between the dual role of marriage or engagement plus parenthood, and the three-role combinations of marriage or engagement plus parenthood plus fulltime employment, postsecondary education, or living independently. The frequency counts in the three-role variables were as follows: marriage or engagement plus parenthood plus fulltime employment = 8 respondents indicated no drinking, and 4 respondents indicated yes to drinking over the past 30 days; 10 respondents indicated no binge drinking, and 4 respondents indicated yes to binge drinking over the past 30 days. These frequencies were judged high enough to run analyses, however the frequencies in the three-role variable of marriage or engagement plus parenthood plus current enrollment in postsecondary education yielded numbers too low to warrant analyses of this three-role variable (6=no, 2=yes on drinking, and 1=no, 0=yes on binge drinking in the past 30 days). Therefore this three-role combination (research questions 3b and 4b) was dropped from the final analysis.
Each of the first three independent variables (marriage or engagement, parenthood, and fulltime employment) is dichotomous. The two remaining independent variables, employment status and living arrangement, had originally been proposed to have three categories each. The first of these, employment status, had categories of, 1) part-time or no employment, 2) fulltime employment, and 3) homemaker, which, when crosstabulated, yielded very small numbers in the category of homemaker (four values ranged from 2 to 8) (see Appendix C). Therefore it was necessary to collapse the participants into two categories of 1) employed fulltime and 2) not employed fulltime. Since the homemaker group was more similar to the group of part-time or no employment in both drinking and binge drinking categories than to the fulltime employment group, based on prior research, it was added to category two. The transformed fulltime employment variable is now dichotomous.

The second remaining independent variable, living independently, was proposed to have three categories of 1) live at home with family of origin 2) live alone or with a roommate, and 3) live with new (own) family (see Chapter 3 p. 46 for definitions of family of origin and new family). When crosstabulated (see Appendix D) there were very small numbers in the category of living alone or with a roommate (two values were 2 and 3). Therefore it was necessary to collapse the participants into two categories of 1) living at home, and 2) living independently. Since the living alone or with a roommate group was more similar to the group of
living with own family based on prior research, than to the living at home group it was added to category two. The transformed living independently variable is now dichotomous.

Cohabitation was considered separately as a category, which would possibly fit with marriage or engagement due to the nature of the live-in romantic same, or opposite sex partner. However, exploratory analyses showed that this compromised the predictive value of the married or engaged group on prevalence of both drinking and binge drinking. Indeed this is reflected in the literature (Bachman, et al., 1984; Bachman et al., 1997, Bachman et al., 2002) in which cohabiting couples had higher prevalence of both drinking and binge drinking than the married or engaged group and were in fact much more similar to the live alone or with roommate category. Thus the cohabiting group, who were more similar to those who lived independently than those who lived at home, were collapsed into the category of living alone or with a roommate which resulted in the dichotomized variable of living independently discussed above.

Table 2
Number of women with zero, one, two, three, or four social roles (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education and living independently) \( (n=249) \)

<table>
<thead>
<tr>
<th>Number of roles</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero</td>
<td>15</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>One</td>
<td>43</td>
<td>17.3</td>
<td>23.3</td>
</tr>
<tr>
<td>Two</td>
<td>68</td>
<td>27.3</td>
<td>50.6</td>
</tr>
<tr>
<td>Three</td>
<td>99</td>
<td>39.8</td>
<td>90.4</td>
</tr>
</tbody>
</table>
Table 2 shows the distribution of the 249 young adult women in this sample who have zero through four social roles including marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently. No respondents who had all five roles. The majority of young adult women had three roles (39.8%), and zero roles were the minority (6%). The mean number of roles in the sample was 2.3 roles per woman.

Table 3
Age and social roles of women with zero, one, two, three, or four social roles (n=249)

<table>
<thead>
<tr>
<th></th>
<th>Zero (n=15)</th>
<th>One (n=43)</th>
<th>Two (n=68)</th>
<th>Three (n=99)</th>
<th>Four (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Mean</td>
<td>22.9</td>
<td>23.2</td>
<td>23.3</td>
<td>23.6</td>
<td>23.7</td>
</tr>
<tr>
<td>Stand.dev.</td>
<td>1.11</td>
<td>1.07</td>
<td>1.02</td>
<td>.65</td>
<td>.54</td>
</tr>
<tr>
<td>Mar/eng</td>
<td>6</td>
<td>8</td>
<td>85</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Parenthood</td>
<td>0</td>
<td>15</td>
<td>49</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Fulltime employment</td>
<td>23</td>
<td>28</td>
<td>56</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Cur/postsec</td>
<td>9</td>
<td>13</td>
<td>10</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Living Independently</td>
<td>5</td>
<td>62</td>
<td>97</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement
Cur/postsec = Current enrollment in Postsecondary Education

Table 3 shows the age and social roles of young adult women with zero through four social roles. Young adult women with multiple social roles are older than young adult women with zero or one social role in this sample. Of those respondents with one, or two
social roles, few are married or engaged (14% and 12% respectively) compared to those with three or four roles in which most of the young women report being married or engaged (86% and 96% respectively). Women who are in the role of parenthood have more social roles in this sample than those who are not. Over half of those with three or more roles had assumed the role of parenthood. Of those with one role, none of the young women reported being in the role of parenthood. Proportionately more women fulfilling one social role are currently enrolled in postsecondary education (21%) as compared to those with two and three social roles (19% and 10% respectively). However, those with four social roles have the highest rate of current enrollment in postsecondary education (42%). Women who are living independently have more social roles than those who are living at home. Few (less than 3%) of women with three or four social roles live at home compared to a substantial number (53%) of women with one or two roles.

As shown in Table 4, young adult women with one role consistently had a higher prevalence of drinking over the past 30 days and a lower prevalence of binge drinking over the past 30 days, except for those with the sole role of living independently. In this sample, over half of the young women in each of the roles drank in the past 30 days, and the binge drinking rate ranged from 28% for married or engaged women to 56% for those currently enrolled in postsecondary education. For each of these single roles, the women had higher prevalence of drinking than binge drinking over the past 30 days.

Table 4
Percent of single role 30-day drinking \((n=237)\) and 30-day binge drinking \((n=249)\)

<table>
<thead>
<tr>
<th>Role</th>
<th>Drinking</th>
<th></th>
<th>Binge drinking</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>Yes</td>
<td>%</td>
</tr>
<tr>
<td>Mar/eng</td>
<td>67</td>
<td>54</td>
<td>126</td>
<td>37</td>
</tr>
<tr>
<td>Parenthood</td>
<td>41</td>
<td>50</td>
<td>82</td>
<td>31</td>
</tr>
<tr>
<td>Fulltime employment</td>
<td>78</td>
<td>67</td>
<td>117</td>
<td>60</td>
</tr>
<tr>
<td>Cur/postsec</td>
<td>31</td>
<td>76</td>
<td>41</td>
<td>24</td>
</tr>
<tr>
<td>Living independently</td>
<td>112</td>
<td>63</td>
<td>179</td>
<td>78</td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement  
Cur/postsec = Current enrollment in Postsecondary Education

Table 4.1

Percent of dual role 30-day drinking \((n=237)\) and 30-day binge drinking \((n=249)\)

<table>
<thead>
<tr>
<th>Dual Role</th>
<th>Drinking</th>
<th></th>
<th>Binge drinking</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>Yes</td>
<td>%</td>
</tr>
<tr>
<td>Mar/eng + Parenthood</td>
<td>24</td>
<td>44</td>
<td>55</td>
<td>15</td>
</tr>
<tr>
<td>Mar/eng + Fulltime employment</td>
<td>37</td>
<td>62</td>
<td>60</td>
<td>23</td>
</tr>
<tr>
<td>Mar/eng + Cur/postsec</td>
<td>7</td>
<td>47</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Mar/eng + Living independently 1</td>
<td>50</td>
<td>63</td>
<td>237</td>
<td>106</td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement  
Cur/postsec = Current enrollment in Postsecondary Education

Table 4.2

Percent of three-role 30-day drinking \((n=237)\) and 30-day binge drinking \((n=249)\)

<table>
<thead>
<tr>
<th>Three Role</th>
<th>Drinking</th>
<th></th>
<th>Binge drinking</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>Yes</td>
<td>%</td>
</tr>
<tr>
<td>Mar/eng + Parenthood + Fulltime employment</td>
<td>4</td>
<td>33</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>Mar/eng + Parenthood + Cur/postsec</td>
<td>2</td>
<td>25</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Mar/eng + Parenthood + Living independently</td>
<td>24</td>
<td>44</td>
<td>55</td>
<td>15</td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement  
Cur/postsec = Current enrollment in Postsecondary Education

Of women with dual role assumptions (see Table 4.1), the highest drinking prevalence was among women who were both married or engaged and employed fulltime. The highest percent of women who drank and binge drank were in the dual-role
categories of marriage or engagement and living independently (63% drink, 43% binge drink). Compared to single roles, women with dual roles had higher prevalence of drinking than binge drinking over the past 30 days, however the overall percentages of drinking and binge drinking were lower for women with dual roles than for those with single roles.

Only a total of 12 (4.8%) women reported having the three roles of marriage or engagement, parenthood, and fulltime employment; and eight (3%) women reported having the three roles of marriage or engagement, parenthood and current enrollment in postsecondary education. The highest percent of women who drink and have three-roles are those who assumed the roles of marriage or engagement, parenthood, and living independently (44% drink, 25% binge). All of the women with three-role assumptions (see Table 4.2) showed lower prevalence of both drinking and binge drinking over 30 days than those women with one or two roles. Overall, these numbers show a pattern toward less drinking, and especially less binge drinking, for young adult women in this sample as they increase the number of roles they assume from one to three.

Table 5
Summary of logistic regressions of prevalence rates of past 30-day drinking controlling for age for single roles (n=237)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Estimate</th>
<th>S.E.</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar/eng</td>
<td>-0.86**</td>
<td>0.29</td>
<td>0.42</td>
</tr>
<tr>
<td>Parenthood</td>
<td>-0.85**</td>
<td>0.30</td>
<td>0.43</td>
</tr>
<tr>
<td>Cur/postsec</td>
<td>0.40</td>
<td>0.41</td>
<td>1.49</td>
</tr>
<tr>
<td>Fulltime employment</td>
<td>0.31</td>
<td>0.28</td>
<td>1.36</td>
</tr>
<tr>
<td>Living independently</td>
<td>-0.04</td>
<td>0.34</td>
<td>.97</td>
</tr>
</tbody>
</table>
**P<.01
Notes: Age was used as a control variable in each of these analyses.
Mar/eng = Marriage or engagement
Cur/postsec = Current enrollment in Postsecondary Education

Table 6
Summary of logistic regressions of prevalence rates of past 30-day binge drinking controlling for age for single roles (n=249)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Estimate</th>
<th>S.E.</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar/eng</td>
<td>-1.26**</td>
<td>0.28</td>
<td>0.28</td>
</tr>
<tr>
<td>Parenthood</td>
<td>-0.42</td>
<td>0.28</td>
<td>0.66</td>
</tr>
<tr>
<td>Cur/postsec</td>
<td>0.52</td>
<td>0.35</td>
<td>1.68</td>
</tr>
<tr>
<td>Fulltime employment</td>
<td>-0.57*</td>
<td>0.26</td>
<td>1.77</td>
</tr>
<tr>
<td>Living independently</td>
<td>-0.17</td>
<td>0.31</td>
<td>0.84</td>
</tr>
</tbody>
</table>

**P<.01
*P<.05
Notes: Age was used as a control variable in each of these analyses.
Mar/eng = Marriage or engagement
Cur/postsec = Current enrollment in Postsecondary Education

Tables 5 and 6 show the results of the logistic regression analysis comparing the roles of the respondents having no drinking or binge drinking with those who drank or engaged in binge drinking in the past 30 days. Respondents who were in the role of marriage or engagement were significantly less likely (OR=.42; p=.003) to drink or to engage in binge drinking (OR=.28; p=.000) as those who were not married or engaged. Those women who reported being in the role of parenthood were also significantly less likely (OR=.43) to drink. Another significant finding was that women who were
employed fulltime were more likely to binge drink (OR=1.77). Marriage or engagement was given the highest priority in the sequence of the analyses because it was expected to be the strongest predictor of decreased prevalence of both drinking and binge drinking, which has been supported by these analyses.

Being in the role of parenthood also had similar predictive values for drinking and binge drinking ($p=.004$ and $p=.134$ respectively). Respondents who were parents were significantly less likely (OR=.43) to drink, however, they were as likely to binge drink (OR=.66) as those who were not parents (see Tables 5 and 6).

Current enrollment in postsecondary education, which was given the next priority in the sequence, had no significant predictive values for drinking or binge drinking ($p=.35$ and $p=.14$ respectively). Respondents who were currently enrolled in postsecondary education were as likely (OR=1.49) to drink or to binge drink (OR=1.68) as those who were not (see Tables 5 and 6).

Fulltime employment, which was given the next priority in the sequence, had no significant predictive values for drinking ($p=.27$). Those respondents who were employed fulltime were as likely (OR=1.36) to drink as those who were not employed fulltime (see Table 5). Respondents who were employed fulltime however, were significantly more likely to binge drink (OR=1.77) as compared to those respondents who were not employed fulltime ($p=.03$) (see Tables 5 and 6).

Living independently had no significant predictive values for drinking and binge drinking ($p=.92$ and $p=.57$ respectively). Respondents who were living independently
were as likely to drink or to binge drink (OR=.97 and .84 respectively) as those who were still living at home (see Tables 5 and 6).

In summary, single role variables, when controlling for age, had several significant predictive results. Those respondents who were married or engaged were less likely (OR=.42) to drink in the past 30 days and were less likely to binge drink (OR=.28) than those who were not married or engaged. Those respondents who were parents were less likely (OR=.43) to drink than those who were not parents. Respondents employed fulltime, were 1.8 times more likely to binge drink compared to those who were not employed fulltime.

It is also interesting to note that past month alcohol use was reported by 63.2% of fulltime college students in a national sample compared to 52.1 percent of their same age peers (NCADI, 1999). In this 1995 sample, the average past month alcohol use was 63% and included a very low number (less than 5%) of fulltime college students. Also, binge-drinking rates from this national college sample were reported to be 40% in 1993 as compared to 34% among noncollege age-mates. In the present sample the average prevalence of binge drinking over 30 days was reported to be 43%. Since the NCADI sample also reported drinking and binge drinking rates over 30 days this seems to indicate a much higher drinking and binge drinking prevalence in this sample than in the national samples. A possible explanation for this could be this sample’s rural background, which according to some research discussed above, has been found to have higher drinking prevalence than national or metropolitan samples.
Statistical Methods

The analysis of the data to answer each of the four research questions listed below necessitated both an examination of 1) how adding roles improved or detracted from the goodness-of-fit of the models, and 2) a more direct comparison of one-role versus two-role, and two-role versus three-role differences. Classification tables based on logistic regression assessed the overall rate of fit of the model to the data by comparing expected values versus observed results on drinking and binge drinking for four groups. For example, in the first model the four groups compared were 1) marriage or engagement plus parenthood – no binge drinking in the past 30 days, 2) marriage or engagement plus parenthood – binge drinking reported in the past 30 days, 3) marriage or engagement – no binge drinking in the past 30 days, and 4) marriage or engagement – binge drinking reported in the past 30 days. If the model predicted group membership accurately, then this was evidence that the model fit (Hosmer & Lemeshow, 2000). Since the rate of overall correct classification for each of the models dictated by the research questions was over 50% (range 51% to 68%), this was a positive measure of goodness-of-fit which then made it possible to run further regressions on the data (see Appendix E). Observed scores were compared with predicted scores in these tables with the overall percentage correct figure in each table reflecting the percent correct of observed scores for each of the models. Cutoff comparisons were set at .63 for drinking (prior mean for drinking for the sample) and .43 for binge drinking (prior mean for binge drinking for the sample).
The classification tables indicated a greater correct classification for binge drinking than the drinking models since the prior cutoff for binge drinking was .43 and the average correct classification was 63.6% while the prior cutoff for drinking was .63 and the average correct classification was 66.1%. However, these may be overestimating the overall fit of the models since no jackknife, or leave-one-out procedure was used to verify the results (these procedures are not available for Binary Logistic Regression in SPSS 11.01). The classification tables and values from these analyses are included in Appendix E.

As part of a model-building strategy Hosmer and Lemeshow’s (2000) goodness-of-fit approaches were implemented using SPSS 11.01 Logistic Regression (Norusis, 2002). In the first stage of this model-building logistic regression was used to determine if the models were appropriate. Once this had been established, the second stage of looking at the coefficients was conducted. The first test of goodness-of-fit was run on each of the 14 models dictated by the research questions, and indicated that the model fit the data in each case. The range of $p$-values in the fit of the models was .41 to .99; $p > .05$, demonstrating no significant difference between the models and the data. Appendix G contains the Hosmer and Lemeshow tests of goodness-of-fit and contingency tables for one-role versus two-role variables and Appendix H contains the same information for two versus three-role variables.

In the next set of analyses comparing single versus multiple roles, combination variables needed to be created. For example, research question 1a. compares the single
role of marriage or engagement with the dual role of marriage or engagement plus parenthood in terms of effects on the dependent variables; binge drinking in the past 30 days (binge) and drinking in the past 30 days (drink). A new variable that combined the roles of both marriage or engagement and parenthood was created that was compared with the variable of those who were married but not parents. This variable (marriage or engagement and parenthood) included all of those respondents who indicated that they had the dual role of marriage or engagement plus parenthood. A chi-square comparison test of two regression coefficients was used to assess the differences between these two variables.

\[
\chi^2 = \frac{B_1 - B_2}{\sqrt{V(B_1 - B_2)}} = \frac{[-1.361] - [-1.046]}{\sqrt{(.374)^2 + (.339)^2 - 2[.345 *.374 *.339]}} = .593
\]

In this example marriage or engagement plus parenthood was compared with marriage or engagement on binge drinking. The numbers used in the above equation [1] were obtained from the SPSS output in Tables 5.1 through 5.4 (See Appendix F). This equation was then applied to each of the research questions in turn using the one, two and three-role variables specified. Therefore the equation was also applied to comparisons of one role with two roles on:

1) Marriage or engagement versus marriage or engagement plus parenthood on drink
2) Marriage or engagement versus marriage or engagement plus fulltime employment on binge

3) Marriage or engagement versus marriage or engagement plus fulltime employment on drink

4) Marriage or engagement versus marriage or engagement plus postsecondary education on binge

5) Marriage or engagement versus marriage or engagement plus postsecondary education on drink.

Since all of the married respondents indicated that they lived independently, there was no live at home group to compare, so marriage or engagement versus marriage or engagement plus living independently was not calculated.

The equation (see equation [1]) was also applied to comparisons of two roles versus three roles on:

1) Marriage or engagement plus parenthood versus marriage or engagement plus parenthood plus fulltime employment on binge

2) Marriage or engagement plus parenthood versus marriage or engagement plus parenthood plus fulltime employment on drink

To find the probability, $p_{chi}$ was computed = CDF.CHISQ($c^2$, 1) where chi-square ($c^2$) was derived from the above formula and $df=1$. Using the CHIDIST statistical function in SPSS 11.01 (Norusis, 2002), which compares observed results
with expected ones, the $p$-value was obtained and used to determine the significance of the difference between the two variables, with significance at the .05 level. Using the above example, where $\chi^2 = .593$, and $df=1$, the $p$-value = .44, which is not significant for the comparison of marriage or engagement versus marriage or engagement plus parenthood on binge. The odds ratio was determined by using the following equation (Hosmer & Lemeshow, 2000):

$$\text{OR}(a,b) = \exp[B_1 \times (a-b)]$$

[2]

where $B_1$ is the regression coefficient for marriage or engagement plus parenthood

$L_2 - L_1 = .73$ where $L_2 = -1.361$ (marriage or engagement plus parenthood) and $L_1 = -1.046$ (marriage or engagement) (see Appendix F)

When the logit of the one-role variable (-1.046) is subtracted from the logit of the two-role variable (-1.361) the result is -.315. Exponentiated this becomes $e^{(-0.315)}$ or 1/1.37 = .73 (odds ratio for marriage or engagement versus marriage or engagement plus parenthood). This equation (see equation [2]) was applied to all of the above listed one versus two-role variables, and two versus three-role variables in turn on binge and drink each to obtain the odds ratios.

This procedure was followed for each of the four research questions involving comparisons of single, dual, and multiple roles. The only comparisons that were not calculated were the marriage or engagement plus parenthood plus current enrollment in
postsecondary education due to a paucity of respondents, and the marriage or engagement versus marriage or engagement plus living independently since all of the respondents who were married indicated that they lived independently, and therefore there was no live at home group to compare. Next, as stipulated by the research questions, social roles were examined in combination for their predictive value in the prevalence of drinking and binge drinking.

**Research Questions**

**Research Question 1**

What is the relative effect of specific two-role assumptions on prevalence of drinking as compared to the single role of marriage or engagement?

<table>
<thead>
<tr>
<th>Roles</th>
<th>p-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar/eng versus Mar/eng + Parenthood</td>
<td>.045*</td>
<td>.46</td>
</tr>
<tr>
<td>Mar/eng versus Mar/eng + Fulltime employment</td>
<td>.017*</td>
<td>2.04</td>
</tr>
<tr>
<td>Mar/eng versus Mar/eng + Cur/postsec</td>
<td>.29</td>
<td>.67</td>
</tr>
</tbody>
</table>

* P<.05 significance

Note: Mar/eng = Marriage or engagement
Cur/postsec = Current enrollment in Postsecondary Education

**a. Marriage or engagement plus parenthood.** There were statistically significant differences in drinking over 30 days between respondents who were married or engaged versus those who were both married or engaged and a parent, indicating that married or
engaged and parenting females were about half as likely to drink (see Table 7) as those who were only married or engaged ($\chi^2 = 5.65, df=1, p<.05$). This finding was determined through a chi-square test between differences of two coefficients. For more information on the test and the output please refer to Appendix F.

Logistic regression was used to determine if the dual role of marriage or engagement plus parenthood, enhanced the prediction of decreased drinking beyond that of marriage or engagement alone. Logistic regression classification tables for marriage or engagement versus marriage or engagement plus parenthood indicated an overall rate of correct classification at 67% at the .63 cutoff value.

b. **Marriage or engagement plus fulltime employment.** There were statistically significant differences in drinking over 30 days between respondents who were married or engaged versus those who were both married or engaged and employed fulltime, indicating that married or engaged and employed fulltime females were approximately twice as likely to drink (see Table 7) as those who were only married or engaged ($\chi^2 = 4.0, df=1, P<.05$).

Logistic regression was used to determine if the dual role of marriage or engagement plus fulltime employment enhanced the prediction of decreased drinking beyond that of marriage or engagement alone. Logistic regression classification tables for marriage or engagement versus marriage or engagement plus fulltime employment indicated an overall rate of correct classification at 67% at the .63 cutoff value.
c. Marriage or engagement plus current enrollment in postsecondary education

There were no statistically significant differences in drinking over 30 days between respondents who were in roles of marriage or engagement versus those who were in roles of both marriage or engagement and currently enrolled in postsecondary education (see Table 7).

Logistic regression was used to determine if the dual role of marriage or engagement plus being currently enrolled in postsecondary education enhanced the prediction of decreased drinking beyond that of marriage or engagement alone. Logistic regression classification tables for marriage or engagement versus marriage or engagement plus current enrollment in postsecondary education indicated an overall rate of correct classification at 65% at the .63 cutoff value.

d. Marriage or engagement plus living independently. This comparison was not calculated since all of the respondents who were married or engaged indicated that they were living independently, and therefore there was no live at home group to compare.

Research Question #2

What is the relative effect of specific two-role assumptions on prevalence of binge drinking as compared to the single role of marriage or engagement?
Table 8
*p*-values and odds ratios for one role versus two roles for binge drinking (*n*=249)

<table>
<thead>
<tr>
<th>Roles</th>
<th><em>p</em>-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar/eng versus Mar/eng + Parenthood</td>
<td>.44</td>
<td>.73</td>
</tr>
<tr>
<td>Mar/eng versus Mar/eng + Fulltime employment</td>
<td>.06</td>
<td>2.65</td>
</tr>
<tr>
<td>Mar/eng versus Mar/eng + Cur/postsec</td>
<td>.94</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement
Cur/postsec = Current enrollment in Postsecondary Education.

a. **Marriage or engagement plus parenthood.** There were no statistically significant differences in binge drinking over 30 days between respondents who were married or engaged versus those who were both married or engaged and a parent (see Table 8).

Logistic regression was used to determine if dual role of marriage or engagement plus parenthood enhanced the prediction of decreased binge drinking beyond that of marriage or engagement alone. Logistic regression classification tables for marriage or engagement versus marriage or engagement plus parenthood indicated an overall rate of correct classification at 64% at the .43 cutoff value.

b. **Marriage or engagement plus fulltime employment.** There were no statistically significant differences in binge drinking over 30 days between respondents who were married or engaged versus those who were both married or engaged and employed fulltime (see Table 8).

Logistic regression was used to determine if the dual role of marriage or engagement plus fulltime employment enhanced the prediction of decreased binge
drinking beyond that of marriage or engagement alone. Logistic regression classification
tables for marriage or engagement versus marriage or engagement plus fulltime
employment indicated an overall rate of correct classification at 66% at the .43 cutoff
value.

c. Marriage or engagement plus current enrollment in postsecondary education.
There were no statistically significant differences in binge drinking over 30 days between
respondents who were in roles of both marriage or engagement versus those who were in
roles of both marriage or engagement and currently enrolled in postsecondary education
(see Table 8).

   Logistic regression was used to determine if the dual role of marriage or
   engagement plus current enrollment in postsecondary education enhanced the prediction
   of decreased binge drinking beyond that of marriage or engagement alone. Logistic
   regression classification tables for marriage or engagement versus marriage or
   engagement plus current enrollment in postsecondary education indicated an overall rate
   of correct classification of 59% at the .43 cutoff value.

   d. Marriage or engagement plus living independently.

   This comparison was not calculated since all of the respondents who were married or
   engaged indicated that they were living independently, and there was no live at home
group to compare.
**Research Question 3**

What is the relative effect of specific three-role assumptions on prevalence of drinking as compared to the dual role of marriage or engagement and parenthood?

Table 9

*p*-values and odds ratios for two roles versus three roles for drinking  

<table>
<thead>
<tr>
<th>Roles</th>
<th>p-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar/eng + Parenthood versus Mar/eng + Parenthood + Fulltime employment</td>
<td>.51</td>
<td>.55</td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement

**a. Marriage or engagement and parenthood plus fulltime employment.**

There were no statistically significant differences in drinking over 30 days between respondents who were married or engaged and a parent (two roles) versus those who were both married or engaged, a parent and employed fulltime (three roles) (see Table 9).

Logistic regression was used to determine if the multiple roles of marriage or engagement plus parenthood plus fulltime employment enhanced the prediction of decreased drinking beyond the dual role of marriage or engagement plus parenthood. Logistic regression classification tables for marriage or engagement plus parenthood versus marriage or engagement plus parenthood plus fulltime employment indicated an overall rate of correct classification at 65% at the .63 cutoff value.
b. **Marriage or engagement and parenthood plus current enrollment in postsecondary education.** This analysis was not run due to insufficient numbers of respondents in this three-role variable (see Appendix B).

c. **Marriage or engagement and parenthood plus living independently.** This comparison was not calculated since all of the respondents who were married or engaged indicated that they lived independently, and there was no live at home group to compare.

**Research Question 4**

What is the relative effect of specific three-role assumptions on prevalence of binge drinking as compared to the dual role of marriage or engagement and parenthood?

Table 10

*p*-values and odds ratios for two roles versus three roles for binge drinking (*n*=249)

<table>
<thead>
<tr>
<th>Roles</th>
<th>p-value</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar/eng + Parenthood versus Mar/eng + Parenthood + Fulltime employment</td>
<td>.11</td>
<td>.22</td>
</tr>
</tbody>
</table>

Note: Mar/eng = Marriage or engagement

a. **Marriage or engagement and parenthood plus fulltime employment.**

There were no statistically significant differences in binge drinking over 30 days between respondents who were married or engaged and a parent (two roles) versus those who were both married or engaged, a parent and employed fulltime (three roles) (see Table 10).
Logistic regression was used to determine if the multiple roles of marriage or engagement plus parenthood plus fulltime employment enhanced the prediction of decreased binge drinking beyond the dual role of marriage or engagement plus parenthood. Logistic regression classification tables for marriage or engagement plus parenthood versus marriage or engagement plus parenthood plus fulltime employment indicated an overall rate of correct classification at 61% at the .43 cutoff value.

b. **Marriage or engagement and parenthood plus current enrollment in postsecondary education**  This analysis was not run due to insufficient numbers of respondents in this three-role variable (see Appendix B).

c. **Marriage or engagement and parenthood plus living independently.**  This comparison was not calculated since all of the respondents who were married or engaged indicated that they lived independently, and there was no live at home group to compare.
Chapter 5

DISCUSSION

The purpose of this study was to determine whether the prevalence of drinking and binge drinking was related to engagement in multiple adult roles for a sample of women in young adulthood. In addition, the relative importance of the various combinations of roles (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) was analyzed in order to provide more detailed information regarding implications for counseling and prevention approaches.

Both the number and type of roles were examined in this study as predictors of drinking and binge drinking over the past month. The number of roles ranged from one to four, and the types of roles included marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently.

This research is significant because it addresses the limitations in the literature on use of alcohol in the transition to young adulthood in several important ways. First, while many studies regarding use of alcohol have focused on women in postsecondary education (Miller, et al., 2000; Werch, et al., 2000), or samples mixing many geographic and regional areas (Bachman, et al., 1997), few have focused on the alcohol use of young adult women as this study does. Second, multiple roles in new combinations are
assessed. Other studies have looked at the combination of the marriage and parenthood roles, or the roles individually as they affect changes in drinking amounts. This study separates out the effects of each role (marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently) in multiple combinations as well as paired associations.

Third, relatively little is known about the transition to young adulthood compared to other portions of the lifespan in relation to alcohol use (Jessor, et al., 1991). A great deal has been learned in recent years about the prevalence of alcohol use during this period (Chen & Kandel, 1995; Johnston, et al., 1997), but studies about what factors affect alcohol use (such as role assumptions) during the young adult period are rarer.

Fourth, there is a critical need for studies that explicitly test associations between differences in roles and status and alcohol use. This study addresses these deficiencies in the research by determining factors that correlate with alcohol use in young adulthood with consideration given to young adult roles both individually, and in combination.

In order to address these issues the following research questions were investigated.

1. What is the relative effect of specific two-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
   a. Marriage or engagement plus parenthood
   b. Marriage or engagement plus fulltime employment
c. Marriage or engagement plus current enrollment in postsecondary education
d. Marriage or engagement plus living independently

2. What is the relative effect of specific two-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?
   a. Marriage or engagement plus parenthood
   b. Marriage or engagement plus fulltime employment
c. Marriage or engagement plus current enrollment in postsecondary education
d. Marriage or engagement plus living independently

3. What is the relative effect of specific three-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?
   a. Marriage or engagement and parenthood plus fulltime employment
   b. Marriage or engagement and parenthood plus current enrollment in postsecondary education
c. Marriage or engagement and parenthood plus living independently

4. What is the relative effect of specific three-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?
a. Marriage or engagement and parenthood plus fulltime employment
b. Marriage or engagement and parenthood plus current enrollment in postsecondary education
c. Marriage or engagement and parenthood plus living independently

Summary and Discussion of Results

1. What is the relative effect of specific two-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?

   a. **Marriage or engagement plus parenthood.** Findings indicate statistically significant differences in drinking over 30 days between respondents who were either married or engaged versus those who were both married or engaged and a parent, indicating that married or engaged and parenting females were about half as likely to drink (OR=.46) as those who were in the single role of marriage or engagement.

   This replicates the findings of Bachman and colleagues (2002) on single versus dual role assumptions where marriage or engagement and parenthood are concerned and this result was expected, since for many reasons, including time, opportunity, finances, and desire, women drink less when they become parents (Bachman, et al., 2002). Research indicates there is a change in the focus of women’s goals during the transition to parenthood, focusing more on those related to motherhood and less on achievement-oriented goals (Nurmi, 1992). They change their goals from focusing on previous role
transitions to those concerning this particular transition. Reconstructing goals is seen as a way of disengaging from prior interests and life stages, and may be a reason for decreasing prior behavior such as alcohol use.

b. Marriage or engagement plus fulltime employment. There were statistically significant differences in drinking over 30 days between respondents who were married or engaged versus those who were both married or engaged and employed fulltime, indicating that married or engaged and employed fulltime females were approximately twice as likely to drink (OR=2.04) as those who were in the single role of marriage or engagement.

This replicates other findings (SAMHSA, 2001) that those who were currently employed had an increase in frequency of binge drinking in young adulthood. Possible explanations include the availability of money because of employment; a job culture that supports drinking; or an increased social group available as a result of being in the world of fulltime employment. Drinking may not thus be incompatible with employment (Vicary, et al., 1998). Also, findings that young adults had problems adjusting to the transition from school to fulltime employment (Nurmi, 1992), and tended to develop maladaptive strategies for coping such as alcohol abuse, would support the finding of increased alcohol use with fulltime employment.

However, there are mixed findings about the effects of fulltime employment on drinking in the literature (Temple, et al., 1991; Wilsnack & Wilsnack, 1992; Power & Estaugh, 1990). This may be due to the type of fulltime employment and the amount of
separation of home and fulltime employment associated with certain occupations. For example, a fulltime job as a business manager may be more correctly termed a career, thus necessitating extra hours not only at fulltime employment but at home preparing for fulltime employment. This would decrease opportunities for drinking as compared to a fulltime job as a salesclerk where there is more separation between job and home, and less carryover in terms of the employment load usually. This would create the opportunity for more time outside of fulltime employment to engage in drinking.

Entering the role of fulltime employment may be associated with decreases in alcohol involvement; however, there is evidence that this relationship is complex and that chronic unemployment (Temple et al., 1991), job stress, opportunities for drinking on the job (Wilsnack & Wilsnack, 1992), or early employment (Power & Estaugh, 1990) might be better predictors of alcohol use than more generalized normative employment in young adulthood. Other studies (Gotham, et al., 1997) indicate decreased drinking with employment and state that young adults who begin fulltime employment after high school tend to show very little change in 30-day alcohol use following high school, but an above-average decrease in binge drinking. These studies have also shown that leaving college to begin fulltime employment is related to decreased alcohol consumption from former college levels (Gotham, et al., 1997).

c. Marriage or engagement plus current enrollment in postsecondary education

This dual role combination produced no significant findings, that is, women who were married or engaged and were currently enrolled in postsecondary education
were no more likely to drink than those who were only married or engaged. This was an unexpected result since postsecondary education students have been found to have higher prevalence of drinking than those who are not currently enrolled, especially college students (Bachman, et al., 2002). However this finding could have been due to the current enrollment in postsecondary education variable used which was not pure, and was confounded with many areas of postsecondary education in addition to college including technical school and military.

d. Marriage or engagement plus living independently. All respondents who were married or engaged were living independently in this sample so it was not possible to compare them with live at home group. More results may have been possible for this question had the sample size been larger and the category of living independently used as a continuous rather than a dichotomous variable.

Comparing alcohol use by young adults living independently with use by those living with their parents shows that those who live independently are more likely to increase their alcohol use (Bachman et al., 1997). They found that those who live with their parents as young adults usually had low substance use during high school and were not likely to increase their substance use after high school. Their alcohol use did increase during young adulthood, but this increase was lower than what is expected for members of this age group.

Also in this study the living arrangement categories including living in college dormitories, living in an apartment, living alone, living with spouse, and living with
roommates were all collapsed into the category of living independently which may have confounded the results. This was necessary, however, due to the low numbers of participants in each category.

2. What is the relative effect of specific two-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the single role of marriage or engagement?

   a. Marriage or engagement plus parenthood. Here no significant differences in binge drinking were found between women who had the roles of marriage or engagement plus parenthood and those who had the single role of marriage or engagement. This was an unexpected finding since according to some research, Quigley and Marlatt (1991) for example, found that changes in roles might serve as “protective factors” leading to discontinuation of binge drinking. The addition of adult roles (marriage or engagement or parenthood) may be incompatible with and preclude the continuation of a heavy pattern of consumption. However, this again could have been due to the small sample size.

   b. Marriage or engagement plus fulltime employment. Again no significant results were noted which was unexpected, but probably explained by the small sample size.

   c. Marriage or engagement plus current enrollment in postsecondary education. There was no significant finding in this comparison between women who were married or engaged and were currently enrolled in postsecondary education when compared with the married or engaged group. This was an unexpected finding due to research from the
National Household Survey on Drug Abuse (NCADI, 1999) indicating that a pattern of increasing rates with increasing educational attainment associated with increased binge drinking, ranging from 34 percent among persons who had not completed high school to 43 percent of those with a college degree. As mentioned in research question 1c., this finding could have been due to the current enrollment in postsecondary education variable used which was not pure, and was confounded with many areas of postsecondary education in addition to college including technical school and military, as well as the small sample size.

**d. Marriage plus living independently.** Again, all respondents who were married or engaged were living independently in this sample so it was not possible to compare them with an only married or engaged group.

3. **What is the relative effect of specific three-role assumptions on prevalence of drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?**

**a. Marriage or engagement and parenthood plus fulltime employment.**

While there were no significant differences between women who had the three roles of marriage or engagement, parenthood, and fulltime employment, there was a pattern toward less drinking, especially binge drinking, controlling for age, which was noted earlier (see Tables 4 through 4.2) as these women increase the number of roles they assume in this sample from one to three.
Some of the reasons for the decrease in alcohol use both in drinking and binge drinking with multiple roles may include the following: 1) excessive use of alcohol may be seen as experimentation, adolescent or early adult behavior, and not as fully adult behavior, 2) specific changes in social contexts such as change in residence may result in changes in friendship patterns and other social contacts, 3) newly married partners generally commit more time to each other and to establishing their homes, leaving less time for hanging out and drinking with friends, 4) the sheer burdens of parenthood leave little time, money, or opportunities for alcohol use, 5) even engagement or anticipation of marriage may show drug and alcohol use reductions, 6) the anticipation of parenthood further reduces alcohol use as the couple feels ready to take on the responsibilities of pregnancy and child rearing, 7) even further reductions in alcohol use often occur during pregnancy, and, 8) finally, as children grow and observe their parents’ behaviors, alcohol use shows further declines, perhaps due to the pressure of being a good role model for young children (Bachman et al., 1997).

b. **Marriage or engagement and parenthood plus current enrollment in postsecondary education.** There were again no significant results for this category, most likely due to the fact of the extremely small number of respondents with these three roles.

c. **Marriage or engagement and parenthood plus living independently.** Again, all respondents who had roles of marriage or engagement and parenthood were living
independently in this sample so it was not possible to compare them with an only marriage or engagement group.

4. **What is the relative effect of specific three-role assumptions on prevalence of binge drinking alcohol over the past 30 days as compared to the dual role of marriage or engagement and parenthood?**

   a. Marriage or engagement and parenthood plus fulltime employment
   b. Marriage or engagement and parenthood plus current enrollment in postsecondary education
   c. **Marriage or engagement and parenthood plus living independently.** Although there were no significant differences between the dual roles of marriage or engagement and parenthood in any of the three-role combinations listed above on binge drinking, patterns in the data analysis in this study indicated lower prevalence of binge drinking for all of these three role categories as compared to dual and single roles (see Tables 4 through 4.2). The extremely small sample sizes of women with three roles may have accounted for the lack of significant results.

**Summary**

It is clear that the changes in roles and responsibilities that accompany the transition to young adulthood are related to changes in alcohol use. Ideally the developmental process of moving from adolescence to adulthood is one of replacing behaviors that are no longer perceived as beneficial or functional (e.g. risky behaviors such as excessive drinking) with ones that are beneficial and functional (supportive of
new roles and responsibilities). To the extent that this process occurs, changes in social roles relate to changes in individual and social behaviors, which in turn relate to changes in alcohol use (Bachman et al., 2002).

Evidence suggests that the notable declines in alcohol use among young adults during their mid-twenties can be attributed in large part to transitions in social roles. The concomitant influence of the many overlapping social roles makes the task of sorting out these effects very difficult. However, this is a reflection of the complexity of the social world in early adulthood. The promise of future research is to consider a number of these roles simultaneously, retaining much of the complexity encountered in the real world (Bachman, et al., 1997).

Limitations

There are limitations that should be considered in any attempt to generalize the findings of this study. First, this research was carried out on one particular sample of women from a rural area of Northeastern United States who were almost all Caucasian. Seventy-nine percent of the women lived in geographically rural areas at the time of measurement (1995); the remaining women lived in suburban areas (7%), urban areas (12%) and on military bases (1%). Therefore, comparisons can only be made with similar samples.

Research shows that among young adults monthly use of alcohol shows a slight positive association with population density. Among young adults aged 18 to 25, the rate
of past month use was higher in large metropolitan areas than rural areas (SAMHSA, 2001). Binge drinking is about the same across all densities except rural, which has a slightly lower rate. Therefore, it was expected that in this northeast rural sample, binge-drinking rates will be lower than the average for the Northeast. However, Bloch, Crockett, and Vicary (1991) found that the prevalence of alcohol use is quite high among this sample when they were adolescents. Other studies also indicate similar results, citing, for example, that eighth graders in rural America are 39% likelier to drink alcohol and 70% likelier to get drunk (CASA, 2000). Furthermore, poverty rates of rural residents are between 14% and 15% compared to a metropolitan poverty rate of 11% to 12% (U.S. Bureau of Census, 2000). Research also suggests that rural youth are as troubled, or even more troubled, than are urban youth while facing similar social and economic deprivation and strains. Helge (cited in Braun, 1991), found rural participants to be at greater risk than urban youth in 34 out of 39 risk dimensions which included alcohol use.

The second limitation had to do with the small sample of women studied (n=249). It was not feasible to divide the dichotomous variables into continuous variables that might have yielded more results. For example, the category of current enrollment in postsecondary education included those were currently in college, technical school or other training. Since the current enrollment in postsecondary education variable was not pure (e.g. not just college) it yielded little in the way of significant results; however, the
sample size would have yielded extremely small groups so continuous variables for all of the categories were not an option.

The fulltime employment variable, which was dichotomized into employed fulltime or not employed fulltime, also limited the range of results. Previous research documents differences in alcohol use between young adults who were employed part-time or fulltime, enlisted in the military, or were homemakers (e.g., Bachman et al., 1997). Young adults who were employed fulltime after high school had average levels of alcohol use during high school. After high school, their alcohol use increases only slightly. Part-time employees, on the other hand, show patterns of alcohol use nearly identical to college students. This is likely because most young adults who hold part-time jobs are, in fact, also part-time or even fulltime college students. It was not possible in this study to sort out the effects of each of these levels of employment, and therefore the results are limited. In addition, this was a non-experimental design, so the results don’t show whether drinking gets in the way of taking on roles or whether the roles assumptions actually decrease the drinking.

Some specific limitations in the analyses were connected with the Hosmer and Lemeshow data analysis on goodness-of-fit. These were that the output was supposed to be based on ten groups, or deciles, and also have all expected frequencies be greater than 5. In this sample, between 7 and 9 deciles were generated since there were inadequate expected frequencies to expand to 10 deciles, due to the small sample size. However, according to Hosmer and Lemeshow (2000), it is only when the goodness of fit statistic is
calculated from 6 or fewer deciles that this would be a major problem, since less than 7
deciles will almost always indicate that the model fits. Having 7, 8 or 9 deciles is an
acceptable level, and the models appear to fit the data. It is an adequate model on the
surface; however, having a larger sample resulting in 10 deciles would result in a more
robust finding.

**Needed Research**

The potential benefits of multiple roles are well documented; e.g. multiple roles
provide multiple sources of social support, skills that can transfer from one role to
another, and an increased sense of meaning, personal worth, and purpose (Tiedje,
Wortman, Downey, Emmons, Biernat, & Lang, 1990); however, more research is needed
in the area of the effects of multiple roles on alcohol use. There is also a critical need for
studies that explicitly test associations between multiple roles and alcohol use, and
studies that determine the degree to which the associations are consistent across diverse
populations and geographic locations.

More research is also needed in the area of living independently. Since some
adults leave parents’ homes and do not increase alcohol use, it would be of interest to
explore what factors seem to protect such individuals. Another promising area for further
exploration involves the decreases in alcohol use linked with marriage or engagement,
including the anticipatory effects linked with engagement. Marriage or engagement
could change behavior patterns, attitudes, opportunities for use of alcohol, or any number of other mediating factors.

Another direction of future research is exploring the reasons that some individuals do not reduce their drinking through young adulthood. While it is not clear whether this “maturing out” effect is related most to young adult development or to role assumptions, such as getting married, having children, or becoming involved in the role of fulltime employment, (Gotham, et al., 1997), it is anticipated that involvement in roles may be used to target individuals for intervention who do not mature out of earlier binge drinking and may be at risk for higher prevalence of drinking and binge drinking (Stacy, Newcomb, & Bentler, 1991).

As indicated by the results that women who were married or engaged and employed fulltime had twice the likelihood of drinking as their unemployed counterparts, further research into effective intervention and prevention strategies for the workplace as it applies to married young adult females is needed. Additional longitudinal research should also examine the potential risk and protective factors for young adult alcohol abuse.

**Implications for Applications**

The significant findings of this study included main effects for the roles of marriage or engagement, parenthood, both marriage or engagement and parenthood, fulltime employment, and both marriage and fulltime employment on prevalence of
drinking and/or binge drinking over 30 days when controlling for age. Young adult women who had assumed the single roles of marriage or engagement, or parenthood, and the dual role of marriage or engagement and parenthood were found to be less likely to drink. It was also found in this study that those who were married or engaged and employed fulltime were more likely to drink than those who were married or engaged but without a dual role. As expected, these decreases were found among those women who had roles of both marriage or engagement and parenthood than among those who were only married or engaged. A trend toward less drinking, especially binge drinking, was noted as the women in this sample increased the number of roles they assumed from one to three. The study demonstrates the importance of both the number of young adult role assumptions and the type of role in lowering the prevalence of drinking and binge drinking.

The roles that have been identified to reduce alcohol use are not ones that it would be wise to manipulate. For example, discouraging young adults from leaving home and going to college, or recommending early marriage or engagement, childbearing and frequent pregnancy as a means of reducing use of alcohol would not be logical or advisable. Therefore, this discussion will focus on currently successful prevention programs and application of these findings to their implementation.

**Literature connecting early drinking levels with adult levels**

“The binge drinking problem starts with children and teens, and that’s where our prevention and education efforts must be focused” (CASA, 2002). Poor adjustment in
young adulthood has been found to be related to alcohol abuse and the early initiation of use (Tubman, Vicary, von Eye, & Lerner, 1990). Because there appear to be multiple risk factors for alcohol abuse in adolescence, prevention focused on single risk factors is likely to be ineffective. Therefore, prevention efforts need to be broad-based, long-range, and multi-faceted in order to deal with the diversity of risk factors.

The developmental implications for prevention of alcohol abuse, according to Bachman (1996), are that “We do not necessarily have to “cure” or “prevent” general trouble-proneness in order to deal with particular drugs.” Based on prior research, it seems unlikely that scare tactics will work, particularly when contradicted by personal experiences (Hawkins & Catalano, 1992). However, realistic information about the risks of a given type of problem behavior, communicated by a credible source, can be persuasive and can play an important role in what must ultimately be the most effective means of reducing alcohol use – reducing demand. In addition, Hawkins and colleagues (1992) have found that reducing availability of alcohol, enforcement of sanctions for underage use of alcohol, and positive alternatives for activities such as alcohol-free community and campus events, have succeeded in reducing alcohol abuse and underage use (Hawkins, et al., 1992). Other studies indicate that raising the legal drinking age or increasing prices with alcohol taxes are associated with lower rates of adolescent alcohol consumption. (Grossman, Chaloupka, Saffer, & Laixuthal, 1994).
Rationale and targets of prevention

Children and adolescents. Presently, most prevention efforts are school-based programs aimed at children and adolescents. Specifically, since attachment to conventional persons and involvement in conventional activities may decrease tendency to use alcohol, prevention strategies should include providing a variety of conventional activities in which students may become involved, and also focus on enhancing family relationships. Another focus of prevention programs should be establishing and encouraging involvement in after-school activities in order to increase a commitment to school and facilitating the development of positive relationships with supportive and conventional adults (Bloch, et al., 1991).

Young adults. Traditionally, prevention and early intervention programs have targeted adolescents, particularly school-based efforts. The continued binge drinking evidenced by some young adults reinforces the need for on-going intervention efforts into young adulthood. While entry into some adult roles may help reduce the frequency of binge drinking it is clear that this is not true for a certain proportion of young adults (Vicary, et al., 1998). During young adulthood, especially the first few years, many individuals move away from the social controls exerted by high schools and parents, and their new freedoms place them at increased risk for alcohol abuse. Although eventually most young adults take on the responsibilities of marriage or engagement and parenthood, those fundamental role changes must come in their own good time. Meanwhile the first years of young adulthood remain ones of significant risk. Findings
suggest that such risks are reduced when young adults are in social roles and situations that keep them in close contact with other people – parents, fiancées, spouses, children – with whom there are strong shared commitments, and toward whom the young adults feel a sense of responsibility (Miller-Tutzauer, et al., 1991); however not in fulltime employment roles that facilitate alcohol use.

**Prevention efforts**

**School Counseling.** School counseling, which includes prevention strategies that have been demonstrated to increase bonding and reduce early prevalence of drinking, must be a focus of prevention efforts for children and adolescents. One of the most successful programs, and a model school program is the Life Skills Training approach (LST) developed by Botvin and colleagues (1995). The program is based on an approach that emphasizes personal skills rather than drug education and relies on future “booster” sessions over several years (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995). Alcohol use behavior, like other types of behavior, is learned through a process of modeling and reinforcement, which is mediated by personal factors such as cognitions, attitudes, and beliefs (Botvin & Tortu, 1988). For these reasons, the LST approach combines both training in the use of social refusal skills (recognizing and coping with pressures to use harmful substances), and life skills (personal and social skills designed to cope with the challenges of adolescent transformation) in an effort to enhance overall competence. It is believed that improving students’ general personal and social competence should reduce their motivation to use alcohol. Instead of focusing on health consequences of drug use,
the LST program presents techniques for developing interpersonal relationships, managing anxiety, and resisting advertising appeals. The Life Skills Training program has consistently produced results indicating substantially less use of alcohol by students who were equipped with life skills (Botvin, et al., 1995; Botvin, Baker, Dusenbury, Tortu & Botvin, 1990).

A recent study, Project ADAPT, compares two methods of implementing the LST program (Swisher, Bechtel, Henry, Vicary, & Smith, 2001). In the curriculum infusion version this program facilitates the integration of substance abuse prevention programs into academic courses and is a strategy that school teachers, and eventually school counselors, can employ to further prevention and guidance aims. Using this method, school counselors will be able to extend their services to far more students via the classroom rather than being limited to seeing a few students in their offices.

School prevention programs alone cannot be expected to solve the problem of alcohol use by youth. However, schools may need to develop more ways to involve parents in prevention, as should other community resources such as churches and family services. In a study which involved parents in school clinics, it was found that parents highly endorsed such interventions which provided contraceptive distribution, family planning, and drug and alcohol counseling (Santelli, Alexander, Farmer, & Papa, 1992). This may indicate that parents are a resource that should be utilized in these efforts.

Implications of research on college alcohol prevention programs are that a brief, norm-based primary prevention binge drinking program consisting of print materials and
telephone contacts holds mixed promise in reducing binge drinking (Werch, et al., 2000).

In considering the value of norm-based interventions, it is recommended that health professionals who develop alcohol prevention programs tailor future interventions targeting social norms to address critical differences among young adults regarding their stage of initiating binge drinking and their binge drinking history. Alcohol awareness programs on college campuses appear to have produced mixed results (Schall, Kemeny, & Maltzman, 1991). However the first year of college appears to present a critical opportunity for preventive interventions.

**Community approaches.** There are several key strategies for community-wide efforts for preventing abuse of alcohol by young women. While entry into some adult roles may help reduce the frequency of drinking, it is clear that this is not true for a certain proportion of young adults. Although more research is needed to determine which strategies and approaches work best, the following appear to be essential components:

1. Communication of a clear, non-use message for youth through all community channels, policies and practices;
2. Role modeling of moderate, low-risk use of alcohol by adults of legal age;
3. Skill building to enhance social/interpersonal communication skills, peer resistance, problem solving, media promotion, and ability to ask for help;
4. Promoting bonding and attachments to family, peers, and school;
5. Promoting belief in conventional social norms, values, and expectations;
6) Increasing the perceived benefits of health enhancing behaviors and decreasing the perceived benefits of health-compromising behaviors;
7) Providing referral, counseling or treatment services for children or families in need of help.

These strategies require an integrated approach and consistent messages transmitted through the mass media, and must involve the entire community (Hawkins, et al., 1992a). Hawkins and colleagues have promoted a “Communities that Care” research-based prevention program that combines the assessment of risk and protective factors with the public health model (use of media, community mobilization, volunteerism, and educational strategies) to allow communities to design and implement their own comprehensive community risk-focused prevention program to reduce alcohol abuse.

For youth, individual characteristics in combination with opportunities, social skills and recognition allow for bonding which, with good role models, produces healthy behaviors (Hawkins, Catalano, and Associates, 1992).

Additionally, research by the National Institute on Alcohol Abuse and Alcoholism (2002) reports the following effective strategies in lowering the prevalence of alcohol use and abuse:

1. Limiting availability of alcohol to within a certain mile-range of public schools.
2. Enforcing laws restricting sale and use of alcohol to those under 21, and laws associated with driving under the influence.
3. Changing social norms regarding alcohol use.

4. Limiting advertising and alcohol-sponsored events.

The price and availability of alcoholic beverages are related to levels of alcohol consumption and alcohol-related problems. Research has also focused on alcohol taxation because taxation is the principal policy mechanism for influencing the price of alcoholic beverages (NIAAA, 2002). Whether various subgroups within the population have different price ranges for the purchase of alcoholic beverages is a research question of substantial significance. Such knowledge would be important for evaluating the economic efficiency and efficacy of alternative tax policies.

The availability of alcoholic beverages has also been a major focus of research. Constraints on the availability of alcoholic beverages have been statistically associated with lower consumption and problem levels. NIAAA encourages studies that will advance current knowledge in these and related areas. Especially important are studies of the effects of price increases and availability controls on rates of alcohol consumption and alcohol-related problems.

**Work-based approaches:** Employee assistance programs (EAPs) offering confidential counseling, education, and referral, are an employee benefit at many places of employment currently. These counselors can be a resource for issues of alcohol abuse and provide directions for self-help such as online and printed materials and are usually covered under the health care benefits of the organization for employees. Young adults are able to access services in person or over the phone from trained professionals at the
worksite in many EAPs to deal with personal issues (such as problem drinking), that effect their health, relationships with others, or job performance.

**Risk factors in young adulthood**

To target the interventions discussed above to at-risk young adult women it is important to identify the risk factors for alcohol abuse in this age group. The very fact of women being in young adulthood puts them at risk for alcohol abuse since this is the period during which alcohol use levels are highest. Another risk factor would be young adult women who have not assumed any of the roles discussed in this study. The findings from this study indicate that those young adult women with zero roles have higher prevalence of both drinking and binge drinking than those with one or more roles. Living independently is also a risk factor since young adult women have new freedoms and are away from social controls. Finally, this study indicates that young adult women who are married and employed fulltime are twice as likely to drink as those who are not employed fulltime. Young adult women with one or more of these risk factors should be targeted for alcohol abuse prevention programs. Ideally, workplace-based interventions could be used to identify, refer, and treat young adult women who abuse alcohol. For example, inservice programs at places of employment could provide education about alcohol abuse and dependency, as well as referral services and information about the Family and Medical Leave Act of 1993 (U.S. Department of Labor, 1993) to take some time off from work to obtain treatment if necessary.
Summary of implications

It is important at the present time to fund research aimed at preventing the early initiation of alcohol use in adolescents, which may then lead to less alcohol abuse in young adulthood. Model programs, such as Botvin’s (1998) Life Skills Training emphasizing personal and skills training programs which include teaching generic personal skills such as problem solving, decision-making, cognitive and behavioral strategies for relieving stress and anxiety, and teaching life skills and social skills such as communication, conversation and assertiveness have demonstrated significant reductions in alcohol use. (Botvin, 1986; Botvin et al., 1995). Also promising are programs such as Project ADAPT, which integrates school counseling with existing academic programs in the schools (Swisher et al., 2001). Community programs and work-based programs are necessary to provide continuing intervention efforts for young adults in regard to alcohol abuse. The harmful outcomes of such behavior are of serious enough consequences to employers, for example, with health care cost concerns, that these prevention and intervention efforts should be emphasized (Vicary, et al., 1998).

Summary and Conclusions

Research shows that alcohol use increases throughout adolescence and early adulthood, and declines thereafter (Bachman, et al., 1984; Schulenberg et al., 1996; Kandel & Logan, 1984; Kandel et al., 1986). Evidence suggests that the notable declines in alcohol use among young adults during their mid-twenties can be attributed in large
part to assumptions of role responsibilities such as marriage or engagement, parenthood, and fulltime employment. A central question throughout this study is to what extent the typical age related changes in alcohol use during young adulthood can be explained in terms of the role assumptions that occur during this period.

The purpose of this study was to determine whether the prevalence of drinking and binge drinking was related to engagement in multiple adult roles and the relative importance of various combinations of roles for a sample of 249 women in young adulthood. These young adult roles included marriage or engagement, parenthood, fulltime employment, current enrollment in postsecondary education, and living independently. Data were obtained from a self-report survey administered during the fall of 1995, and results indicated significant effects of several of these young adult roles on prevalence of drinking and/or binge drinking over the past 30 days when controlling for age.

In summary this research showed that certain roles and role combinations appeared to be related to alcohol use behaviors for young adult women. Marriage or engagement and parenthood and the dual role of marriage or engagement plus parenthood were associated with lower alcohol use, and fulltime employment and the dual role of marriage or engagement and fulltime employment, were associated with higher alcohol use. A trend toward less drinking, especially binge drinking, was noted as the women in this sample increased the number of roles they assumed from one to three. The study
demonstrated the importance of young adult role assumptions in lowering the prevalence of drinking and in targeting at-risk groups for prevention interventions.

The prevention discussion noted that drinking problems start with children and adolescents; the place where our prevention and education efforts must be focused. Implications of this research for the school counseling profession include implementing prevention strategies that have been demonstrated to increase involvement in a variety of conventional activities and attachment to conventional persons, such as Botvin’s (1998) Life Skills Training Program. Prevention strategies aimed at young adults using community approaches were also discussed including an integrated approach and consistent messages transmitted through the mass media as well as a focus on multiple risk factors that must be considered for prevention to be effective.

In conclusion, risks for alcohol abuse for women during young adulthood are reduced when they enter into social roles and situations that keep them in close contact with other people in their lives. Roles such as marriage or engagement, and parenthood in particular, with people that young adult women share strong commitments and a sense of responsibility seem to deter drinking and binge drinking. Prevention programs that emphasize early bonding and commitments to family, school, and community lay the foundation for interpersonal skills, which may then follow adolescents into young adulthood. Finally, the importance this study places on young adult experience, and the support found for this approach, suggests that potentials for change and improvement
during young adulthood are as important as the detrimental effects of problem behavior in adolescence with regard to alcohol use.
References


Pretreatment responses of women and men to the Comprehensive Drinker Profile.

motivational approach for reducing alcohol/drug problems in college. *Health
Education and Behavior, 27*(6), 744-759.

longitudinal study of “maturing out.” *Journal of Studies on Alcohol, 52*(2), Sep:
434-440.


National Institute on Alcohol Abuse and Alcoholism (NIAAA) (2002).
http://www.niaaa.nih.gov/

http://www.health.org:80/govstudy/bkd376/Foreword.htm

Neve, R.J., Lemmons, P.H., & Drop, M.J. (2000). Changes in alcohol use and drinking
problems in relation to role transitions in different stages of the life course.
*Substance Abuse, 21*(3), Sep: 163-178.


http://www.samhsa.gov/OAS/nhsda/nhsda97/97tab.htm#E10E73.

http://www.samhsa.gov/oaw/nhsda/2knhsda/chapter3.htm


Appendix A - Frequencies of Independent and Dependent Variables.

### MARRIAGE OR ENGAGEMENT

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
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<td>46.6</td>
<td>46.8</td>
<td>46.8</td>
</tr>
<tr>
<td>1.00</td>
<td>132</td>
<td>53.0</td>
<td>53.2</td>
<td></td>
</tr>
<tr>
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<td>99.6</td>
<td>100.0</td>
<td>100.0</td>
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<td>Missing System</td>
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<td>.4</td>
<td></td>
<td></td>
</tr>
<tr>
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Appendix B
Frequency tables and Missing Data for Marriage or Engagement, Parenthood, Fulltime Employment, Current enrollment in postsecondary education Binge, and Drink

## PARENTHOOD * MARRIED OR ENGAGED * FULLTIME EMPLOYMENT * POSTSECONDARY EDUCATION * BINGE FREQUENCY TABLE

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Appendix C
Crosstabulations for three levels of the variable of Living Arrangements
0=live alone or with a roommate, 1=live at home, 2=live with own family

**DRINK * EMPLOYMENT STATUS Crosstabulation**

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**BINGE * EMPLOYMENT STATUS Crosstabulation**

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Appendix D
Crosstabulations for three levels of the variable of Employment Status
0=Employed part-time or not at all  1=Employed fulltime  2=Homemaker

### DRINK * LIVING ARRANGEMENT Crosstabulation

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### BINGE * LIVING ARRANGEMENT Crosstabulation

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Appendix E
Logistic Regression Classification Tables on Models based on Research Questions using prior cut values of .63 for drink and .43 for binge

Note: Observed scores are compared with predicted scores in these tables and the overall percentage correct figure in each table reflects the percent correct of observed scores for each of the models.

Table 1. Classification Table for the model Marriage or engagement + Parenthood vs. Marriage or engagement on Drink

<table>
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Overall Percentage 64.7

a. The cut value is .630

Table 2. Classification Table for the model Marriage or engagement + Fulltime employment vs. Marriage or engagement on Drink

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Overall Percentage 66.8

a. The cut value is .630
Table 3. Classification Table for the model Marriage or engagement + current enrollment in postsecondary education vs. Marriage or engagement on Drink

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<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DRINK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Step 1 DRINK NO</td>
<td>51</td>
<td>36</td>
<td>58.6</td>
</tr>
<tr>
<td>Step 1 DRINK YES</td>
<td>39</td>
<td>109</td>
<td>73.6</td>
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<tr>
<td>Overall Percentage</td>
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<td>68.1</td>
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</table>

a. The cut value is .630

Table 4. Classification Table for the model Marriage or engagement + Parenthood + Fulltime employment vs. Marriage or engagement on Drink

<table>
<thead>
<tr>
<th></th>
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<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>DRINK</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Step 1 DRINK NO</td>
<td>63</td>
<td>24</td>
<td>72.4</td>
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<tr>
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<td>59</td>
<td>89</td>
<td>60.1</td>
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<tr>
<td>Overall Percentage</td>
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<td></td>
<td>64.7</td>
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</tbody>
</table>

a. The cut value is .630

Table 6. Classification Table for the model of Marriage or engagement + Parenthood vs. Marriage or engagement on Binge

<table>
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<tr>
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<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Step 1 BINGE NO</td>
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<td>54</td>
<td>62.2</td>
</tr>
<tr>
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<td>34</td>
<td>70</td>
<td>67.3</td>
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<tr>
<td>Overall Percentage</td>
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<td></td>
<td>64.4</td>
</tr>
</tbody>
</table>

a. The cut value is .430
Table 7. Classification Table for the model of Marriage or engagement + Fulltime Employment vs. Marriage or engagement plus Parenthood on Binge

<table>
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<th>Percentage Correct</th>
</tr>
</thead>
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<tr>
<td></td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Step 1</td>
<td>BINGE</td>
<td>NO 88</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YES 30</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. The cut value is .430

Table 9. Classification Table for the model of Marriage or engagement + Parenthood + Fulltime employment vs. Marriage or engagement plus parenthood on Binge

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<th>BINGE</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Step 1</td>
<td>BINGE</td>
<td>NO 88</td>
</tr>
<tr>
<td></td>
<td></td>
<td>YES 42</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. The cut value is .430
Appendix F
Tables of SPSS coefficients for computing the chi-square equation for differences of two variables:

Table 5.1 Variables in the Equation - Married vs. Married plus Parent on Binge

<table>
<thead>
<tr>
<th>Step</th>
<th>AGE</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-290</td>
<td>.133</td>
<td>4.723</td>
<td>1</td>
<td>.030</td>
<td>.748</td>
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<tr>
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<td>.000</td>
<td>.257</td>
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<tr>
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<td>-1.046</td>
<td>.339</td>
<td>9.536</td>
<td>1</td>
<td>.002</td>
<td>.351</td>
</tr>
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<td></td>
<td>.012</td>
<td>.445</td>
<td>.001</td>
<td>1</td>
<td>.978</td>
<td>1.012</td>
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<td>5.089</td>
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a. Variable(s) entered on step 1: MAR0PAR1.

Table 5.2 Correlation Matrix - Married vs. Married plus Parent on Binge

<table>
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<tr>
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<td>-.057</td>
<td>.035</td>
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<td>.266</td>
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<td>1.000</td>
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<td>1.000</td>
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### Table 5.3 - Variables in the Equation - Married vs. Married plus Parent on Drink

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<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13.616</td>
<td>1</td>
<td>.000</td>
<td>.588</td>
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<tr>
<td></td>
<td>MAR1PAR1</td>
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<td>.355</td>
<td>11.682</td>
<td>1</td>
<td>.001</td>
<td>.297</td>
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<tr>
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<td>1.561</td>
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</tr>
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a. Variable(s) entered on step 1: MAR1PAR0.

### Table 5.4 Correlation Matrix - Married vs. Married plus Parent on Drink

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<th>MAR1PAR1</th>
<th>MAR1PAR0</th>
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</thead>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Constant</td>
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<td>-.044</td>
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<td></td>
<td>AGE</td>
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<td>.006</td>
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<td>-.044</td>
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Appendix G
Hosmer and Lemeshow Goodness-of-fit statistics tables from SPSS for one-role versus two-role variables

1) Hosmer and Lemeshow Test of Goodness of Fit for Married + Parent vs. Married on Drink

<table>
<thead>
<tr>
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<th>Sig.</th>
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<tbody>
<tr>
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1) Contingency Table for Hosmer and Lemeshow Test

<table>
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<th></th>
<th>DRINK = 1.00</th>
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<th>Total</th>
</tr>
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<tbody>
<tr>
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<td>Expected</td>
<td>Observed</td>
<td>Expected</td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>10</td>
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<td>29</td>
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<tr>
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<td>12</td>
<td>12.549</td>
<td>11</td>
<td>10.451</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>15</td>
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<td>16.372</td>
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<td>17</td>
<td>14.365</td>
<td>22</td>
<td>24.635</td>
<td>39</td>
</tr>
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<td>11.993</td>
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<td>8</td>
<td>10.445</td>
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<td>31.555</td>
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<td>7</td>
<td>4</td>
<td>3.682</td>
<td>12</td>
<td>12.318</td>
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<td>8</td>
<td>6</td>
<td>5.687</td>
<td>31</td>
<td>31.313</td>
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2) Hosmer and Lemeshow Test of Goodness-of-Fit for Married + Parent vs. Married on Binge

<table>
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<tbody>
<tr>
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### 2) Contingency Table for Hosmer and Lemeshow Test

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<th>Total</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>2</td>
<td>18</td>
<td>18.054</td>
<td>18.054</td>
</tr>
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<td>3</td>
<td>15</td>
<td>16.228</td>
<td>16.228</td>
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<td>17.947</td>
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<td>17.502</td>
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<td>19</td>
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<td>18.672</td>
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<tr>
<td>8</td>
<td>11</td>
<td>12.129</td>
<td>12.129</td>
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</table>

### 3) Hosmer and Lemeshow Test of Goodness-of-fit for Married + Fulltime employment vs. Married on Drink

<table>
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### 3) Contingency Table for Hosmer and Lemeshow Test

<table>
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</tr>
</thead>
<tbody>
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<tr>
<td>2</td>
<td>11</td>
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<td>13</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>16.330</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
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<td>6</td>
</tr>
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<td>5</td>
<td>10</td>
<td>9.453</td>
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<tr>
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<td>5</td>
<td>6.149</td>
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</tr>
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<td>7</td>
<td>8</td>
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</tr>
<tr>
<td>8</td>
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<td>5.173</td>
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### 4) Hosmer and Lemeshow Test of Goodness-of-fit for Married + Parent vs. Married on Binge

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<td>.997</td>
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### 4) Contingency Table for Hosmer and Lemeshow Test

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<th>BINGE = .00</th>
<th>Expected</th>
<th>Total</th>
</tr>
</thead>
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<td>4.277</td>
<td>30</td>
</tr>
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<td>18</td>
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<td>4.326</td>
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<td>5.401</td>
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### 5) Hosmer and Lemeshow Test for Goodness-of-fit
for Married + Higher Education vs. Married on Drink

<table>
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### 5) Contingency Table for Hosmer and Lemeshow Test

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<th>Total</th>
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6) Hosmer and Lemeshow Test of Goodness-of-fit for Married + Higher Education vs. Married on Binge

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6) Contingency Table for Hosmer and Lemeshow Test

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Appendix H
Hosmer and Lemeshow Goodness-of-fit statistics tables from SPSS for two versus three role variables

1) Hosmer and Lemeshow Test of Goodness-of-fit
for Married + Parent + Employed Fulltime on Drink

<table>
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1) Contingency Table for Hosmer and Lemeshow Test

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2) Hosmer and Lemeshow Test of Goodness-of-fit
for Married + Parent + Employed Fulltime on Binge

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2) Contingency Table for Hosmer and Lemeshow Test

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VITA
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(814) 231-1449

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