An Empirical Investigation Of Adolescent Depression, Alcohol Use, And Health Issues: Evidence From Family Structure And Gender

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ABSTRACT

A hundred and fifty (150) cases were chosen from the 2007 National Survey on Drug Use and Health. The study examined the relationship between alcohol use and depression and considered the impact of family structure and gender. Using ANOVA, it was concluded that family structure did not have a significant impact on the relationship between alcohol use and depression. Similar results were found when gender was also analyzed.

Keywords: Adolescent Depression; Health; Alcohol Use; Risk Factor; Stress; Family; Gender

INTRODUCTION

Adolescent depression and alcohol use, family structure and gender substance use (e.g., alcohol), and mental health (e.g., depression) are not unknown phenomena to the adolescent population (Salem, Zimmerman, & Notaro, 1998). For instance, Moon (2008) noted that alcohol use was pervasive among U. S. adolescents, while Waller, Hallfors, Halpern, Iritani, Ford, & Guo (2006) noted that depression was common during adolescence. These notations were corroborated by the results of the 2007 National Survey on Drug Use and Health (NSDUH).

According to the Substance Abuse and Mental Health Services Administration, Office of Applied Studies (SAMSHA) (2008), the rates of current alcohol use among adolescents were 3.5 percent of those aged 12 or 13, 14.7 percent of those aged 14 or 15, and 29.0 percent of those aged 16 or 17 years. These reports illustrated that adolescents had had at least one drink in the past 30 days of the period in which the survey was taken. Moreover, the trend for the 2002-2006 reports highlighted a slight decline in the percentages of current alcohol use for all age groups. For example, for the 16 or 17 age group, there has been a steady decline from 32.6 percent in 2002 to 29.7 percent in 2006. The 12 or 13 age group also showed a steady decline from 4.3 percent (2002) to 3.9 percent (2006), while the 14 or 15 age group steadily declined from 16.6 percent (2002) to 15.6 percent (2006). In addition, the overall results for binge, heavy, and current alcohol use among adolescents aged 12 to 17 years were 9.7, 2.3, and 15.9 percent, respectively. In comparison to the reports of the previous year (2006), the rates were basically the same (10.3, 2.4, and 16.6 percent, respectively). Thus, the results of the 2007 NSDUH confirmed that ages 12 to 18 years are, most of the time, the initiation years for alcohol use (Wills, Pierce, & Evans, 1996).

In the report on the prevalence of depression among youths, it was noted that in the past year, the prevalence of Major Depressive Episode (MDE) ranged from 2.8 percent among 12-year olds to 11.8 percent among those aged 16 years and 11.1 percent among those aged 17 years. When the results were compared by gender, females rated higher than males (11.9 and 4.6 percent, respectively) (SAMSHA, 2008). Therefore, these results supported gender differences of depression or depressive symptoms found in other studies (e.g., Barrett & Turner, 2005; Waller et al., 2006; Langenkamp & Frisco, 2008). The results from the NSDUH also illustrated the association between the adolescents who had MDE in the past year and substance or alcohol use. It was reported that

the occurrence of MDE among adolescents age 12 to 17 years was associated with a higher prevalence of illicit drug or alcohol dependence or abuse (18.9 percent). With regard to alcohol use, it was reported that the adolescents who had MDE in the past year were more likely to report heavy use of alcohol compared to those who did not have MDE (3.8 vs. 2.2 percent) (SAMSHA, 2008). With such clear evidence of the association between depression and alcohol use or other illicit drugs among adolescents, consideration has to be made as to the role of the family. In discussing the risk factors of substance use or depression, family structure has been noted to be an important risk factor. For instance, Wills et al. (1996) noted that studies of family structure have shown that adolescents from both single-parent and "blended" families had higher rates of substance use (p. 811). Similarly, Jenkins and Zunguze (1998) also noted the association between family structure and substance use. They further noted that children of step-families presented more internalizing behavior (e.g., depression) in comparison to children living in nuclear families. Thus, there is evidence to connect family structure to substance use and family structure to depression, as well as to illustrate the association between substance use (e.g., alcohol) and depression. Therefore, the general objective of this study is to examine the impact of family structure on alcohol use and depression among adolescents in the U.S. In this regard, the aim is to determine the relationship between alcohol use and depression among adolescents. Additionally, it will explore the relationship between alcohol use and family structure, as well as the relationship between family structure and depression. Finally, it will also attempt to provide recommendations for future research on adolescence substance use and mental health problems.

In this regard, the null hypothesis for this study is that family structure will have a significant impact on alcohol use and depression. The alternative hypothesis is that family structure will not have a significant impact on alcohol use and depression among adolescents. As noted previously by Moon (2008) and Waller et al. (2006), alcohol use and depression have been commonly associated with adolescents within the United States of America. The theoretical framework that has been associated with research on adolescence substance use and depression is the family interaction theory (FIT). This theory emphasized the early attachment between parent and child. It is believed that strong attachment between parents and their children would act as a protective factor against internalizing (e.g., depression) and externalizing (e.g., alcohol use) behaviors (Brook, Saar, Zhang, & Brook, 2009). Therefore, factors such as family disruption or conflict could increase the likelihood for adolescent alcohol use and depression.

Another interactional theory that is used by researchers is one developed by Jessor and Jessor (1977). Their problem behavior theory considered the social-structural variables, such as the family and socialization, as antecedents and background of psychosocial problem patterns (e.g., drinking). Thus, all the research presented will focus on the relationship between alcohol use, depression, and family structure among adolescents, as well as highlight the gender differences.

Adolescent Depression, Alcohol Use, and Gender

The association between adolescent depression and alcohol use has been found in many studies. For instance, Waller et al. (2007) used a logistic regression to examine the associations between 16 risk behavior patterns and current depressive symptoms by gender among a nationally representative sample of U.S. adolescents in grades 7 through 12. It was found that, in comparison to abstention, involvement in common adolescent risk behaviors, such as drinking, was related to increased odds of depressive symptoms in both sexes. In terms of alcohol use, there was no gender difference between abstainers and drinkers. Thus, the relationship between depression and alcohol use is well established.

Family Structure and Adolescent Alcohol Use

Research that has focused on adolescent alcohol use and family structure has identified a significant relationship between the two variables. For instance, Antecol and Bedard (2007) found that the presence or absence of a biological father in the home impacted the use of alcohol among adolescents. Using the National Longitudinal Survey of Youth (NLSY) and its Young Adult Supplement (NLSY-YAS), they reported there was a decrease in the percentage of alcohol use (drinking) when the biological father was present in the home for an additional five years (i.e., in comparison to from birth to five years). In terms of gender, the weighted mean for females who reported drinking (age 15 and older) was less when the biological father was present in the home for an additional 15 years. In contrast, the males reported less drinking when the biological father was present for an additional ten years

compared to an additional five or 15 years. Therefore, Antecol and Bedard illustrated the significance of the time in which the family was disrupted (absence of biological father) as an associated factor to alcohol use among adolescents aged 15 years and older. A limitation of Antecol and Bedard's study was that it did not identify if the fathers were substance users. Nevertheless, it was supported by research conducted by Fisher Miles, Austin, Camargo, and Colditz (2007) who found that the initiation of alcohol use among adolescents was by age 15 years. Additionally, it was found that having parents or underage siblings who drank at home was positively associated with initiation of alcohol use (Fisher et al.). This result was indicative of both gender and for those living in two-parent or single-parent households or any other household. The study also identified that family cohesion (e.g., eating together at the family table) would decrease the age of initiation for girls.

Family Structure and Adolescent Depression

As a result of the prevalence of various family forms, especially the increase in single-parent and step-families over the last several decades, much interest has been generated in studying the effects of family structure on mental health (Barrett & Turner, 2005). In their study of 19-21 year olds in Miami-Dade County in Florida, Barrett and Turner found that higher levels of depressive symptoms were reported among young adults from step-families, single-parent families, and single-parent families with other relatives present, in comparison to mother-father families. These family structures were identified based on the responses to the question of with whom they were living with between the ages of 13 and 18 years. Moreover, respondents who were African American reported being a part of both types of single-parent families. Similarly, in a study conducted on family disruption in childhood and risk of adult depression, it was found that there would be a higher lifetime risk of depression if the family structure had shifted by age 7 (Gilman, Kawachi, Fitzmaurice, & Buka, 2003). When socioeconomic status was unadjusted (Model I), adjusted for at birth (Model II) and adjusted for at birth and age 7 years (Model III), family disruption was significantly associated with the onset of major depression. Therefore, they noted that the family disruption, particularly parental divorce, between birth and age 7 was a predictor of a two-fold higher depression risk. Although a limitation of this study was that it could not clearly state if family disruption would have also been a predictive factor for children beyond age 7, this did not decrease the effect of family disruption, such as parental divorce, on the onset of depression. This is so, as Gilman et al. noted that other research had found that parental separation predicted the onset of mood disorders only when it occurred by age 5.

Family Structure, Depression, and Alcohol Use

Similar to the Gilman et al. (2003) study, Sun (2001) had found that family disruption significantly affected adolescents' well-being. The study additionally revealed that adolescents from families that subsequently dissolve exhibited more academic, psychological, and behavioral problems before the disruption occurred in the family. Although the study did not focus on depressive symptoms, it did examine self-esteem as a variable for psychological well being, which research has proven is associated with depression. In addition, there was no gender difference in the alcohol use of adolescents during the pre-disruption period (Sun). More recently, Langenkamp and Frisco (2008) used the National Longitudinal Study of Adolescent Health (Add Health) to explore whether family transitions (in relation to family structure) were related to adolescent emotional distress (acute depression and excessive drinking). They found that going through family transition, such as divorce and remarriage, was related to acute depression and excessive binge drinking. However, they found that this association occurred only under certain circumstances. For instance, it was found that as maternal-adolescent emotional distance increased, the likelihood of severe emotional distress following a family transition would also increase. They further realized that adolescents who transitioned out of a single-mother home versus a mother-father household had a lower likelihood of reporting acute depressive symptoms. Therefore, family transition was associated with acute depressive symptoms and alcohol use in the context of attachment between the mother and child.

Other Implications of Family Structure, Gender, and Adolescent Depression

A significant implication of family structure and depression among adolescents is the phenomena of suicidal ideation. In studying the psychological factors that contribute to adolescent suicidal ideation, Sun and Hui (2007) were able to identify the underlying factors that were associated with suicidal ideation. Through the use of structural equation modeling, they found that family cohesion and a sense of school belonging were the core

predictors of self-esteem and depression, and that depression was a strong mediator of suicidal ideation. Overall, family cohesion had a significant negative effect on depression and suicidal ideation. Although this study was conducted on Chinese Adolescents, it is still significant as it demonstrated the impact of family structure (in the context of family cohesion) on depression.

In general, the studies on adolescent depression and alcohol use have taken into consideration the impact of the family structure. In this regard, family disruptions, transitions, and cohesion were the contextual variables used to identify the impact of family structure. All the presented research did not identify any significant gender differences when examining alcohol use and depression. Furthermore, households with absent fathers have been found to be associated with the increased initiation of alcohol use among adolescents.

METHOD

The sample for this study was drawn from the National Survey of Drug Use and Health (NSDUH) 2007 database. One hundred and fifty cases were randomly selected from 17,727 of the 55,435 public use file. The 17,727 were cases of the respondents who were between the ages of 12 and 17 years. The SPSS (Statistical Package for the Social Sciences) software was used to make the random selection. The NSDUH 2007 sampling method was part of the 5-year (2005-2009) stratified sampling method of the 50 states, including the District of Columbia.

Depression was measured by the use of the nine depressive symptoms. The questions on the NSDUH survey pertained to if the respondents had ever had any of the symptoms in their lives which lasted a period of several days or more. The nine depressive symptoms were in accordance to the *DSM-IV-TR* criteria. The dependent variable was nominal. The independent variables were alcohol use and family structure. Alcohol use was measured by the question on the NSDUH survey pertaining to alcohol use within the past year and month. Family structure was measured by questions pertaining to mother in household and father in household. Both independent variables were nominal variables. Descriptive analyses were used for demographic information such as age, gender, and race/ethnicity. An analysis was also used to identify the age group of first alcohol use. Cross-tabulations were used to analyze the relationship between each of the nine depressive symptoms and alcohol use in the past year, alcohol in the past month, mother in household, and father in household. Lastly, an ANOVA analysis was used to analyze the impact of family structure on depression and alcohol use.

RESULTS

Tables 1-3 illustrate the descriptive analysis of the demographics of the sample. Table 1 shows the age categories of the sample.

Table 1: Age Category

	Frequency	Percent
12-13 Years Old	41	27.3
14-15 Years Old	56	37.3
16-17 Years Old	53	35.3
Total	150	100.0

As seen in Table 1, the largest portion of the sample was 14-15 year olds. Table 2 shows gender difference in the sample where there was a higher proportion of males over females. In terms of race/ethnicity, Table 3 shows the percentages of each race in the sample.

Table 2: Gender

	Frequency	Percent
Male	78	52.0
Female	72	48.0
Total	150	100.0

There were more non-Hispanic Whites in the sample, followed by Hispanic, then non-Hispanic Black/African American. Other races that followed included non-Hispanic Native American/Alaskan Native, non-

Hispanic Native Hawaiian/Other Pacific Islander, non-Hispanic Asian, and non-Hispanic more than one race. Figure 1 will further illustrate the gender by race dispersion in the study. Supporting data is available from Professor Osho.

Table 3: Race/Ethnicity

	Frequency	Percent
NonHisp White	80	53.3
NonHisp Black/Afr Am	24	16.0
NonHisp Native Am/AK Native	3	2.0
NonHisp Native HI/Pac Isl	1	0.7
NonHisp Asian	8	5.3
NonHisp more than one race	2	1.3
Hispanic	32	21.3
Total	150	100.0

A descriptive analysis was also used to identify the age group that mostly responded to using alcohol. Table 4 shows that the 14-year olds or younger age group responded mostly to using alcohol than the 15-17 year olds. However, a little over half of the sample reported being non-users of alcohol.

Table 4: Alcohol Age of First Use

	Frequency	Percent
14 Years or Younger	43	28.7
15-17 Years Old	24	16.0
Non Users	83	55.3
Total	150	100.0

The cross-tabulation analysis of the nine depressive symptoms, family structure (mother in the household, father in the household), and alcohol use within the past year and month showed the relationship between each depressive symptom and each independent variable (family structure and alcohol use). With regard to the relationship between each of the nine depressive symptoms and alcohol use within the past year, Table 5 shows that a relationship was found between the variables. However, the chi-square analysis showed that the relationship was not significant by an alpha of 0.10. Moreover, the Spearman's *rho* showed that alcohol use within the past year and four of nine depressive symptoms had a weak inverse relationship, while the other five symptoms were of weak positive relationship.

Table 5: Cross-tabulation between Depressive Symptoms and Alcohol Use within the Past Year

	Percent	χ^2	Spearman's *rho*
Sad/empty/depressed most of day or discouraged	60.9	1.78	-.256
Lost interest or pleasure in most things	63.6	.945	-.181
Sleep problems	61.9	.025	.033
Others noticed that R was restless or lethargic	58.3	.178	.086
Changes in appetite or weight	57.9	.825	.185
Felt tired/low energy nearly every day	60.0	.320	.115
Felt worthless nearly every day	69.2	.212	- .096
Inability to concentrate or make decisions	65.0	.320	- .115
Any thoughts or plans of suicide	61.9	.025	.033

No significance was evident for all the chi-square values 9 ($\alpha = .10$).

Unlike alcohol use within the past year, Table 6 shows that there was no relationship found between alcohol use within the past month and each of the nine depressive symptoms. Furthermore, the chi-square analysis provided no significance at an alpha of 0.10. In terms of the Spearman's *rho*, a weak inverse relationship was found between four of the nine depressive symptoms and alcohol use within the past month, while another four had a weak positive relationship, and one had no relationship.

Table 6: Cross-tabulation between Depressive Symptoms and Alcohol Use within the Past Month

	Percent	χ^2	Spearman's *rho*
Sad/empty/depressed most of day or discouraged	34.8	1.98	-.271
Lost interest or pleasure in most things	31.8	.026	-.030
Sleep problems	38.1	1.71	-.267
Others noticed that R was restless or lethargic	33.3	.000	.000
Changes in appetite or weight	31.6	.126	.073
Felt tired/low energy nearly every day	30.0	.600	.158
Felt worthless nearly every day	23.1	1.81	.280
Inability to concentrate or make decisions	35.0	.150	-.079
Any thoughts or plans of suicide	28.6	1.71	.267

No significance was evident for all the chi-square values ($\alpha = .10$).

Table 7 shows that a high relationship was found between each of the nine depressive symptoms and the presence of a mother in the respondent's household. The chi-square analysis showed a significance of the relationship for only two symptoms - changes in appetite and weight and felt worthless nearly every day. The Spearman's *rho* showed and a weak inverse relationship for three of the depressive symptoms and a weak positive relationship for the others, except for changes in appetite and weight and felt worthless nearly every day symptoms which were moderately related to the presence of a mother in the household. Table 8 shows that there is a high relationship between each of the nine depressive symptoms and father's presence in the household. However, the chi-square analysis showed that this relationship was significant ($\alpha = .10$) for only one symptom (changes in appetite or weight). The Spearman's *rho* analysis showed that there was no relationship found for two of the symptoms, while two symptoms had a weak inverse relationship and the others were weak but positive, except for changes in weight or appetite which was a moderate positive relationship.

Table 7: Cross-tabulation between Depressive Symptoms and Mother in the Household (HH)

	Mother in the HH		
	Percent	χ^2	Spearman's *rho*
Sad/empty/depressed most of day or discouraged	87.0	.386	120
Lost interest or pleasure in most things	95.5	3.31	.338
Sleep problems	90.5	1.36	.238
Others noticed that R was restless or lethargic	83.3	.381	-.126
Changes in appetite or weight	94.7	4.37*	.427
Felt tired/low energy nearly every day	90.0	.686	.169
Felt worthless nearly every day	100.0	4.49*	.442
Inability to concentrate or make decisions	85.0	.686	-.169
Any thoughts or plans of suicide	85.7	.490	-.143

*significant at $\alpha = .10$.

Table 8: Cross-tabulation between Depressive Symptoms and Father in the Household (HH)

	Father in the HH		
	Percent	χ^2	Spearman's *rho*
Sad/empty/depressed most of day or discouraged	73.9	.002	-.009
Lost interest or pleasure in most things	86.4	2.76	.309
Sleep problems	76.2	.127	.073
Others noticed that R was restless or lethargic	75.0	.000	.000
Changes in appetite or weight	84.2	4.13*	.415
Felt tired/low energy nearly every day	75.0	.000	.000
Felt worthless nearly every day	76.9	.140	.078
Inability to concentrate or make decisions	80.0	1.60	.258
Any thoughts or plans of suicide	71.4	1.14	-.218

*significant at $\alpha = .10$.

Tables 9 and 10 show that there was no relationship found between family structure and alcohol use. Accordingly, the chi-square analysis had no significant relationship. For Spearman's *rho*, a very weak inverse relationship was found between mother's presence in the household and alcohol use within the past year. All other correlations were weak but positive.

Table 9: Cross-tabulation between Family Structure and Alcohol Use within the Past Year

	Percent	χ^2	Spearman's *rho*
Mother in HH	36.8	.006	-.006
Father in HH	34.6	.614	.064

No significance was evident for all the Chi-Square values at α = .10.

Table 10: Cross-tabulation between Family Structure and Alcohol Use within the Past Month

	Percent	χ^2	Spearman's *rho*
Mother in HH	13.2	.708	.069
Father in HH	11.5	1.71	.107

No significance was evident for all the Chi-Square values at α = .10.

These analyses showed that family structure was the only independent variable that was significant when the means of the depressive symptoms were compared to the means of alcohol use and family structure. Additional supporting data is available from Professor Osho. Family structure was significant at an alpha of .10. Therefore, it was evident that whether the respondents had a depressive symptom was dependent on whether the respondent's mother or father was present in the household. Particular symptoms, such as loss of interest or pleasure in most things, was significant to both mother and father in the household (α (.10) = .073 mother in HH, .103 father in HH). Changes in appetite or weight was also significant for both family structure variables (α (.10) = .038 mother in HH, .044 father in HH). Respondents feeling tired/low energy nearly every day was only significant with mother in household (α (.10) = .035). No significance was found when the means of alcohol use and family structure were compared. Therefore, the null hypothesis (H_o) would have to be rejected; hence, family structure did not have a significant impact on the relationship between alcohol use and depression. Additional supporting data is available from Professor Osho. On the other hand, at a significance level of .10, a statistical relationship was found between three depressive symptoms and gender. Additional supporting data available from Professor Osho shows the significance of sad/empty/depressed most of day or discouraged (p = .104), lost interest or pleasure in most things (p = .009), and any thoughts or plans of suicide (p = .046). However there was no statistical significant relationship found between alcohol use and gender.

DISCUSSION

Unlike the studies reviewed (e.g., Antecol & Bedard, 2007), this study found that the presence or absence of a father present did not correlate well with those respondents who reported using alcohol within the past year or month. However, similar to their study, this study could not differentiate if the father was biological or non-biological. Nonetheless, the cross-tabulation results indicated that there was a relationship between alcohol use (specifically, alcohol use within the past year), although it was not a significant relationship.

Comparable to other studies (e.g., Barrett & Turner, 2005; Gilman et al, 2003), the results of this study indicated that there was a significant relationship between depression and family structure. This was particularly evident for the relationship between the depressive symptoms and the presence or absence of the mother in the home. A limitation of this result is that this could not be determined whether the mother in the household was biological or non-biological. Thus, a deeper analysis of the result could not be provided which would have corroborated the results found by the aforementioned studies. Like the reports on family structure as a mediating factor between depression and substance use such as drinking (Langenkamp & Frisco, 2008), the results of this study indicate that there may be other contexts involved that may allow family structure to act as a mediator. Therefore, other contexts, such as the family's socio-economic status, education level, religious affiliation, to name a few, if considered, could have more of an impact on the relationship to be found between family structure and depression and alcohol use. Hence, it would be recommended that future studies focus on these other family contexts along with family structure. Nevertheless, similar to the study conducted by Sun and Hui (2007), in the United States, family structure had a negative effect on suicidal thoughts or plans as a depressive symptom. Although this relationship was weak, it is still pertinent to the discussion of suicidal ideation among adolescents.

As previously mentioned, this study was not able to differentiate biological mother and father from non-biological mother and father in the data used. Another limitation was that the specific time line for the depressive symptoms used was not present for all the symptoms, as it should be indicated according to the *DSM-IV-TR*.

CONCLUSION

Similar to previous studies, this study found a relationship between alcohol use and depression and family structure and depression. Taking into consideration the limitations of this study, future studies on this topic will be able to provide a deeper analysis of the indicated relationships. Overall, this study will add to the literature on depression, alcohol use, and family structure.

AUTHOR INFORMATION

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