Spring 6-14-2024

Social Support as a Moderator of Life Stress and Alcohol Consumption

Paige Patano
DePaul University, ppatano@depaul.edu

The Moderating Role of Social Support on the Relationship between Life Stressors and Alcohol Consumption in Emerging Adults

A Thesis Presented in

Partial Fulfillment of the

Requirements for the Degree of

Master of Science

By Paige Patano

June 2024

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

Thesis Committee

Joanna Buscemi, Ph.D., Chairperson

Susan Tran, Ph.D.

Biography

The author was born in Libertyville, Illinois. She graduated from Saint Viator High School in 2016. She earned her Bachelor of Science in Psychology with a Clinical/Community concentration and a minor in Adult Development from the University of Illinois Urbana-Champaign in 2020.

Table of Contents

List of Tables

List of Figures

Abstract

Heavy alcohol use in emerging adults has several consequences, including increased risk-taking behaviors, cognitive deficits, and alcohol use disorder (AUD). Thus, it is important to understand risk factors and protective factors to heavy drinking. Experiencing life stressors may be associated with higher alcohol use in emerging adults, especially for historically marginalized populations. General social support, which may mitigate the impact of life stressors, tends to be a protective factor against drinking, although the literature is mixed on which types of relationships are considered protective. Between the support of family, friends, and significant others, it is unclear which relationships are associated with lower drinking levels and whether they moderate associations between life stressors and drinking. Thus, this study aims to explore which relationship types moderate the association between life stressors and alcohol consumption within a diverse sample. Participants completed a series of questionnaires to assess life stress, social support, and alcohol consumption, in addition to basic demographic information. A series of regression analyses were conducted using SPSS to better understand the relationship between these variables and any potential interaction between life stressors and social support on alcohol consumption. Results showed a significant positive relationship between total life stressors and both measures of alcohol consumption (total drinks consumed over a two-week period and greatest number of drinks consumed over a 2-hour period). There was a significant negative relationship between family support and both measures of alcohol consumption. Social support did not significantly moderate the relationship

between life stressors and alcohol consumption. These findings suggest that targeting life stressors and family support can be useful in alcohol prevention and intervention programs.

Keywords: alcohol use; emerging adults; life stressors; social support

Introduction

Alcohol consumption is a common social practice in young adulthood that is associated with significant health consequences. Heavy drinking in early adulthood is strongly associated with injury risk, risky sexual behaviors, and morbidity risk (Kuntsche et al., 2017). It is also associated with both short-term and long-term memory deficits (Carbia et al., 2017; Pérez-García et al., 2022). Despite these consequences, more than 30% of young adults binge drink on a regular basis (Pérez-García et al., 2022). Because heavy drinking leads to negative consequences, it is important to understand the risk and protective factors associated with drinking behaviors in emerging adulthood.

Life stressors have been found to be a risk factor for heavy drinking, and they are associated with elevated drinking levels (Dawson et al., 2005; Salgado García et al., 2020). Life stressors are any major stressful event in one's life that may cause strain, such as a major change, trauma, or chronic stressor (APA Dictionary of Psychology, n.d.). Life stressors are also linked with higher rates of alcohol use disorder (AUD) (Sacco et al., 2014). A literature review by Keyes and colleagues (2011) found that across four different types of stress (fateful/catastrophic events, child maltreatment, common adult stressful life events, and minority stress), there was a general trend towards higher rates of alcohol consumption and AUD. This review highlights that regardless of the type of life stressor, there are generally negative implications in drinking patterns. It also highlights that minority stress can lead to heavier drinking. While several studies have found that there is a relationship between life stressors and alcohol

consumption, research is limited in racially and ethnically diverse samples. The relationship between life stressors and alcohol use is especially important to explore as historically marginalized populations typically experience additional stressors as a result of racism and/or discrimination. In addition to ordinary life stressors, these populations often experience acculturative stress and race-related stress, which can increase risky drinking behaviors (Pittman et al., 2019; Conn et al., 2017). Additional research has shown that there is a relationship between the stressful experience of racial and ethnic microaggressions and binge drinking among students of color at historically white institutions (Blume et al., 2012). Exploring this relationship with a more racially and ethnically diverse sample can fill a gap that exists in the current literature, ultimately providing a better understanding of how life stressors and alcohol consumption are related.

It is posited that the relationship between life events and alcohol use may be influenced by coping strategies available in response to stressors (Dawson et al., 2005; Sacco et al., 2014). Social support is a possible coping strategy that may serve as a protective factor between the life stressor/alcohol use relationship (Veenstra et al., 2007). Social support has been described as the network that one turns to for emotional support or assistance, often when they are faced with a stressor (APA Dictionary of Psychology, n.d.) and has been found to be inversely associated with alcohol use (Groh et al., 2007; Steptoe et al., 1996). Therefore, those with relatively low levels of social support may be at greater risk for heavy drinking. These individuals may not have many people to talk to about their

stressors, leading them to use alcohol to cope. In a study investigating exam stress and health behaviors in a college sample, Steptoe and colleagues (1996) found that students with high social support who were experiencing exam stress showed a decrease in alcohol consumption, whereas their low social support counterparts showed an increase in consumption. These results support the idea that in times of stress, social support may be a protective factor against drinking. This support usually comes from friends, family members, and significant others. However, the literature on how each of these individual relationship types may influence drinking behaviors is mixed. Some studies have found that family support is particularly protective while friend support is not significantly related to alcohol consumption (Hamdan-Mansour et al., 2007). Others have found that friend support is the most protective against drinking (Groh et al., 2007). Still, other studies show that significant other support is the most important, while friends and family show no relationship (Jarnecke & South, 2014). Because there is no clear trend linking specific relationship types to alcohol use patterns, it is important that more research is done in this area to provide insight into how different types of social support may operate as protective or risk factors for drinking.

It can be useful to understand potential relationships between stressful life events and alcohol consumption through the stress-buffering hypothesis of social support. This hypothesis posits that social support can operate as a buffer between the negative effects of stressors on drinking behaviors (Eisenbarth, 2020).

According to this model, higher levels of social support serve as a protective factor against higher alcohol consumption, lessening the effects of life stressors on consumption. The literature is mixed on this hypothesis, with some literature supporting it, some showing no effect, and some showing an opposite effect (Eisenbarth, 2020). For this reason, more research is needed to better understand how social support can influence the relationship between life stress and drinking. More specifically, it can be useful to understand how perceived social support varies by relationship type (family, friends, or significant other), and how this in turn influences stressors' effects on alcohol use.

It is also important to understand risk and protective factors associated with higher quantities of alcohol consumption in young adults as they may be at higher risk for developing an alcohol use disorder. Alcohol use disorder is "a medical condition characterized by an impaired ability to stop or control alcohol use despite adverse social, occupational, or health consequences" (US Department of Health and Human Services, 2023). Alcohol addiction is common in the United States, with approximately 14.5 million people suffering with an AUD in the United States (US Department of Health and Human Services, 2021). There are links between binge drinking in adolescence and early adulthood and risk for AUD (Addolorato et al., 2018; Gowin et al, 2017). Additionally, higher levels of stressors are associated with higher risk of AUD (Keyes et al., 2011). Because life stressors are an established risk factor for AUD, it is important to explore ways in which this relationship can be buffered. Social support may be a potential buffer

against heavy drinking and alcohol misuse, but more research is needed to understand this effect. We can better inform prevention services by understanding factors that predict or mitigate early signs of heavy drinking.

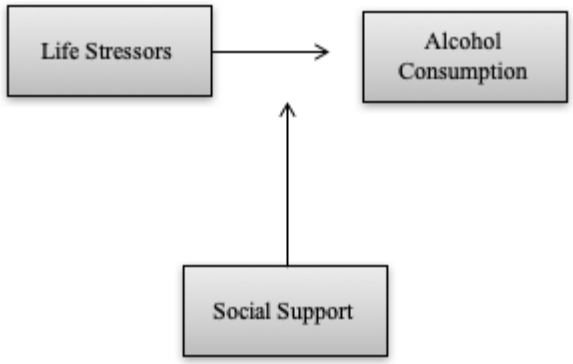
Literature has shown that there is a link between high life stressors and heavier alcohol consumption (Dawson et al., 2005; Salgado García et al., 2020; Keyes at al., 2011). There is also a link between high social support and lower alcohol consumption (Groh et al., 2007; Steptoe at el., 1996). However, this link is not as clearly established, and it is unclear how each specific relationship type influences alcohol consumption (Hamdan-Mansour et al., 2007; Groh et al., 2007; Jarnecke & South, 2014). Additionally, much of this research does not utilize diverse samples. Understanding these relationships in a racially and ethnically diverse sample of college students adds to the literature in an area that is currently lacking, especially because historically marginalized populations are more likely to be exposed to additional stressors (Pitmann et al., 2017). This study also explores each specific type of relationship (family, friend, and significant other) when examining the relationship between social support and drinking, adding a more nuanced lens to understanding how social support influences drinking behaviors. Identifying which types of social supports are protective against heavy drinking may better inform intervention efforts to prevent later alcohol-related problems in young adults. The literature is mixed on the influence of each relationship type on alcohol use outcomes, so additional research can help clarify the direction of these relationships.

Thus, the current study addressed the following aims:

1. Aim 1: To test the relationship between life stressors and alcohol consumption
    a. Hypothesis 1: Life stressors will have a significant positive relationship with alcohol consumption. High life stressors will be associated with high alcohol consumption in both alcohol consumption measures (total drinks consumed over a two-week period, and greatest number of drinks consumed over a two-hour period).
2. Aim 2: To examine the relationship between different types of social support on alcohol consumption.
    b. Hypothesis 2: Social support will have a significant negative relationship with alcohol consumption. High social support for each relationship type (family, friends, and significant other) will be associated with lower alcohol consumption in both alcohol consumption measures (total drinks consumed over a two-week period, and greatest number of drinks consumed over a two-hour period).
3. Aim 3: To test the moderating effect of different types of social support on the relationship between life stressors and alcohol consumption.
    c. Hypothesis 3: All types of social support will significantly moderate the relationship between life stressors and alcohol consumption (see Figure 1). When social support (family, friends, and significant other)

is high, it will weaken the relationship between high life stressors (total and impact) and both measures of alcohol consumption (total drinks consumed over a two-week period, and greatest number of drinks consumed over a two-hour period).

Figure 1: Moderation by Social Support



We hypothesize that social support will moderate the relationship between life stressors and alcohol consumption.

Method

This study utilized a cross-sectional design to examine the relationship between life stressors, social support, and alcohol consumption at baseline. The data is part of a larger study funded by the DePaul University-Rosalind Franklin University of Medicine and Science Research Pilot Grant Program. The parent study measured psychosocial stressors and physical health outcomes in an undergraduate sample and was approved by the IRBs of DePaul University and Rosalind Franklin University of Medicine and Science.

Participants

The sample was composed of two-hundred sixty-five college students from a large, urban Midwestern university. The sample was racially and

ethnically diverse (53.2% white, 22.6% Asian, 6.4% Black, 17.2% two or more racial groups, or a racial group not included; 23.4% Latinx). Within the sample, 71.3% identified as female. Age ranged from 18 to 24 years old, with a mean age of 19.2 years old. To be eligible, participants had to: 1) be enrolled as an undergraduate at the university; 2) be between ages 18 and 24; 3) be able to read and write in English; and 4) have an unlimited text plan on a personal cell phone to receive text prompts. Varsity athletes were not included in the study because of major differences in health-related behaviors when compared to the general student population. Participants provided consent and could withdraw it at any time throughout the study.

Procedure

Participants were recruited for the study through flyers around campus and through presentations in front of classes and organizations at the university. As compensation for participation, participants received a $15 gift card for completing the baseline survey. Further compensation was provided for longitudinal components of the parent study, but the current study only utilized baseline data.

Measures

Participants were asked to complete a self-report questionnaire at baseline assessing several aspects of physical health and stress. These questionnaires were administered online via a Qualtrics survey. The current study looked specifically at measures of life stress, social support, and alcohol consumption.

Demographics

At the beginning of the survey, basic demographic information was collected. This included age, biological sex and gender identity, sexual orientation, race and ethnicity, year in school, location of residence, highest level of education completed by any parents or primary caregiver, and employment status. Racial identification fell into one of six groups, coded as follows: 1 – White; 2 – Black or African American; 3 – American Indian or Alaska Native; 4 – Asian or Asian American; 5 – Native Hawaiian or Pacific Islander; 6 – Other.

Life Stressors

Life stressors were measured using the Life Stressor Checklist-Revised (LSC-R). This questionnaire includes a list of 30 stressful life events with a yes/no response format. A sample item is, "Has someone close to you died suddenly or unexpectedly (for example, an accident, sudden heart attack, murder, or suicide)?". Additionally, the impact of life stressors was measured by asking participants to rate how much each endorsed event on the LSC-R affected their life during the past year on a Likert scale from 1-5 (1 = not at all or never; 5 = extremely) (Wolfe et al., 1997).

Social Support

We used the Multidimensional Scale of Perceived Social Support (MSPSS) to assess participants' perceptions of social support with their friends, family, and significant others (Zimet et al., 1990). The MSPSS is a 12-item questionnaire that uses a Likert scale from 1-7 (1 = strongly disagree; 7 = strongly agree) to assess the participant's level of perceived social support. Examples of items are "There is a special person around when I am in need;" "I get the

emotional support and help I need from my family;" "I can count on my friends when things go wrong." This scale demonstrates very good internal consistency with a Cronbach's alpha of 0.92 in our sample. The Cronbach's alphas for each subscale were as follows: family = 0.91, friends = 0.94, and significant other = 0.94.

Alcohol Consumption

The Daily Drinking Questionnaire (DDQ) was administered to retrospectively assess participants' drinking patterns over the past two weeks. Participants were asked to report how many drinks they had for each day over the past two weeks, and how many hours they spent drinking during those days. They were also asked to report the greatest number of drinks that they consumed over a two-hour period in the past two weeks. The DDQ has good internal consistency (Cronbach's alpha = 0.73; Lewis & Neighbors, 2004).

Results

Analysis

Descriptive Statistics

Descriptive statistics were performed to obtain the mean and standard deviation of the scores for life stressors, social support, and alcohol consumption. Frequencies and means were calculated for demographic variables, including race, ethnicity, sex, and age.

Preprocessing

Skewness and kurtosis values generated on SPSS were used to assess the normality of the distribution for each variable. Values falling between –1 and +1 indicate that the variables are normally distributed. Upon generating this statistic, we found that each variable was skewed, indicating a high number of outliers.

Rather than removing them from the data set, these values were Winsorized by changing each outlier's value to the nearest inlier (Dixon & Tukey, 1968). After correcting outliers, skewness and kurtosis fell within a normal range.

Correlations were run on SPSS to determine preliminary relationships between variables before formal analysis. Notable correlations included family support and greatest number of drinks consumed over a two-hour period (p = .026) and total life stressors and greatest number of drinks consumed over a two-hour period (p = .01). These correlations also helped to inform the design of our models. Upon generating these statistics, we found that the MSPSS subscales (family, friends, and significant other) were all significantly related. To avoid issues with multicollinearity, we analyzed each subscale in a separate model.

Multicollinearity was assessed by generating the VIF (variance inflation factor) statistic in SPSS. Values above 4 are considered a violation of multicollinearity. All values fell below this threshold, so multicollinearity was not a factor in analysis.

Scoring and Calculations

The Life Stressor Checklist *total score* was calculated by summing each stressful event endorsed (those with "yes" responses) to calculate a total. The range of scores was from 0 to 30, with 0 indicating no stressful events endorsed and 30 indicating that all stressful events listed were endorsed. Higher scores indicate higher levels of life stressors. In addition to the total number of stressful events, the Life Stressor Checklist *impact score* was calculated to rate the overall impact of stressful events. This was scored by summing the impact rating (1-5) of

each endorsed event, with totals ranging from 0 to 150. Higher scores indicate higher impact of life stressors.

The Multidimensional Scale of Perceived Social Support was scored by summing and averaging the ratings for each relationship type subscale (friends, family, and significant other). There are 4 items for each subscale. Averages can range from 1 to 7, with 1 indicating the lowest level of support and 7 indicating the highest level of support.

The Daily Drinking Questionnaire was scored to obtain the total amount of drinks a participant consumes in a typical two-week period, and to obtain the greatest number of drinks consumed over a two-hour period during the past two weeks. To obtain the total amount of drinks over a two-week period, all drinks reported over the two-week period were summed to get a total number of alcoholic beverages consumed. The lower limit of this measure is 0, indicating no drinks were consumed. There is no upper limit for this measure. The greatest number of drinks consumed over a two-hour period was self-reported, so no calculation was necessary. The lower limit of this measure is 0, and there is no upper limit.

Analytic Plan

Hypothesis 1: Life stressors will have a significant positive relationship with alcohol consumption. High life stressors (total and impact) will be associated with high alcohol consumption in both alcohol consumption measures (total drinks consumed over a two-week period, and greatest number of drinks consumed over a two-hour period).

To analyze the relationship between total life stressors (independent variable) and total drinks consumed over a two-week period (dependent variable), hierarchical linear regression controlling for sex and race was used. Sex and race were entered into step 1, followed by the independent variable (life stressor checklist total score).

The same steps were repeated in a second regression to analyze the relationship between total life stressors (independent variable) and greatest number of drinks consumed over a two-hour period (dependent variable).

These regressions were then repeated with life stressor impact as the independent variable to assess the relationship between life stressor impact and both alcohol consumption measures.

Hypothesis 2: Social support will have a significant negative relationship with alcohol consumption. High social support for each relationship type (family, friends, and significant other) will be associated with lower alcohol consumption in both alcohol consumption measures (total drinks consumed over a two-week period, and greatest number of drinks consumed over a two-hour period).

Hierarchical linear regression controlling for sex and race was used to explore the link between different types of social support (independent variables: family, friends, and significant other) and total drinks consumed over a two-week period (dependent variable). Sex and race were entered into step 1 as control variables followed by each independent variable in step 2. These variables were analyzed in separate models.

The same steps were repeated to analyze the relationship between different types of social support (independent variables: family, friends, and significant other) and greatest number of drinks consumed over a two-hour period (dependent variable).

Hypothesis 3: All types of social support will significantly moderate the relationship between life stressors and alcohol consumption. When social support (family, friends, and significant other) is high, it will weaken the relationship between high life stressors (total and impact) and both measures of alcohol consumption (total drinks consumed over a two-week period, and greatest number of drinks consumed over a two-hour period).

To test for the moderating effect of social support on the relationship between life stressors and total drinks consumed over a two-week period (dependent variable), we mean centered the measures of social support (moderators: family, friends, and significant other) and total life stressors (independent variable) to analyze in separate models. Each standardized moderator value was multiplied with the standardized independent variable value to obtain the interaction terms. For each moderator, we ran a separate hierarchical multiple regression controlling for sex and race. Sex and race were inputted into step 1, followed by the independent variable and the moderator in step 2, and the interaction term in step 3. If an interaction showed a significant effect ($p < 0.05$), we used a simple slopes analysis to see the slope at each level of the moderator to understand the nature of the interaction.

These steps were repeated to test for the moderating effect of social support (moderators: family, friends, and significant other) on the relationship between life stressors (independent variable) and greatest number of drinks consumed over a two-hour period (dependent variable).

These regressions were then repeated with life stressor impact as the independent variable to assess the moderating role of social support on the relationship between life stressor impact and both alcohol consumption measures.

Results

Descriptive Statistics

Frequencies were calculated for demographic variables including race, sex, ethnicity, and age (see Table 1). Descriptive statistics were performed to obtain the mean, standard deviation, and skewness of the scores for life stressors (LSC total: $M = 3.71$; $SD = 2.32$; LSC impact: $M = 10.15$; $SD = 7.38$), social support (MSPSS total: $M = 5.90$; $SD = .92$; MSPSS friend: $M = 5.98$; $SD = 1.01$; MSPSS family: $M = 5.75$; $SD = 1.21$; MSPSS significant other: $M = 5.97$; $SD = 1.17$), and alcohol consumption (DDQ greatest drinks consumed over a two-hour period: $M = 1.79$; $SD = 2.16$; DDQ total drinks consumed over a two-week period: $M = 3.31$; $SD = 4.77$) (see Table 2).

Table 1
Demographic Frequencies

Demographic	Variables	Frequency	Percent
Race	White	141	53.2%
	Black or African American	17	6.4%
	American Indian or Alaska Native	1	0.4%
	Asian or Asian American	60	22.6%
	Native Hawaiian or Pacific	1	0.4%
	Islander	45	17%
	Other		
Biological Sex	Male	76	28.7%
	Female	189	71.3%
Ethnicity	Hispanic	62	23.4%
	Non-Hispanic	203	76.6%
Age	18	69	26%
	19	73	27.5%
	20	58	21.9%
	21	36	13.6%
	22	20	7.5%
	23	5	1.9%
	24	4	1.5%
Total		265	100%

Table 2
Descriptive Statistics for Life Stressors, Social Support, and Alcohol Consumption

Variable	N	Min.	Max.	Mean	SD
Life Stressors (Total)	265	0.00	9.00	3.71	2.32
Life Stressors (Impact)	250	1.00	29.00	10.15	7.37
Social Support (Total)	265	3.33	7.00	5.90	0.92
Friend Support	265	3.00	7.00	5.98	1.01
Family Support	265	2.50	7.00	5.75	1.21
Significant Other Support	265	2.75	7.00	5.97	1.17
Total Drinks over 2 Weeks	241	0.00	15.00	3.31	4.77
Most Drinks over 2 Hours	265	0.00	7.00	1.79	2.16

Control Variables

A series of ANOVAs were run to determine if there was a difference in both alcohol use outcomes based on race, ethnicity, and sex. This was based on the previously cited research suggesting that historically marginalized populations may have different drinking patterns as a result of unique race-related and acculturative stressors (Pittman et al., 2019; Conn et al., 2017). Additionally, we ran the analysis for sex differences because the literature shows that men typically drink significantly more than women in the United States, both in quantity and in frequency (White, 2020).

There were significant differences in alcohol use outcomes between racial groups ($p < .001$ for total drinks consumed over a two-week period; $p = .006$ for greatest number of drinks consumed over a 2-hour period), such that white participants drank significantly more than participants who were Black, Asian, or from more than one racial group/unspecified racial groups. There were also significant differences in alcohol consumption between sexes ($p < .001$ for total drinks consumed over a two-week period; $p = .015$ for greatest number of drinks consumed over a 2-hour period), such that men drank significantly more than women. There was not a significant difference in alcohol use outcomes between different ethnicities. As a result of these significant differences, we controlled for both sex and race in the regression models.

Life Stressors and Alcohol Consumption

After controlling for sex and race, total scores on the life stressor checklist were significantly positively associated with both total drinks consumed over a

two-week period **(**R^2 = .12, p = .02) and greatest number of drinks consumed over a two-hour period (R^2 = .07, p = .003). There was not a significant relationship between LSC impact scores and alcohol consumption *(p* = .23 for total drinks consumed over a two-week period; p = .06 for greatest number of drinks consumed over a two-hour period). See Table 3.

Social Support and Alcohol Consumption

After controlling for sex and race, family support was significantly negatively associated with both total drinks consumed over a two-week period (R^2 = .12, p = .03) and the greatest number of drinks consumed over a two-hour period (R^2 = .06, p = .01). There was not a significant relationship between friend, significant other, or total social support and either drinking outcome (see Table 3).

Table 3

Regression Results for Main Effects

Independent Variables	Total Drinks over 2 Weeks		Most Drinks over 2 Hours	
	Beta	R^2	Beta	R^2
Life Stressors (Total)	.14*	.12	.18**	.07
Race	-.22***		-.13*	
Biological Sex	-.22***		-.14*	
Life Stressors (Impact)	.08	.11	.12	.05
Race	-.21***		-.13*	
Biological Sex	-.23***		-.15*	
Social Support (Total)	-.09	.10	-.07	.04
Race	-.23***		-.13*	
Biological Sex	-.19**		-.12	
Family Support	-.14*	.12	-.15*	.06
Race	-.24***		-.14*	
Biological Sex	-.20**		-.12*	
Significant Other Support	-.09	.11	-.06	.04
Race	-.22***		-.13*	
Biological Sex	-.19**		-.12	
Friend Support	.03	.10	.05	.04
Race	-.22***		-.13*	
Biological Sex	-.20**		-.12*	

*** $p < .001$
** $p < .01$
* $p < .05$

Social Support as a Moderator between Life Stressors and Alcohol Consumption

After controlling for sex and race, none of the social support variables moderated the relationship between either measure of life stressors and either measure of alcohol consumption. In these models, life stressor totals accounted for a significant amount of variance (see Tables 4.1 and 4.2).

Table 4.1

Multiple Regression Results for Life Stressors (Total) and Social Support

Independent Variables	Total Drinks over 2 Weeks		Most Drinks over 2 Hours	
	Beta	R^2	Beta	R^2
Life Stressors (Total) * Social Support (Total)	-.04	.12	-.02	.07
Social Support (Total)	-.08		-.05	
Life Stressors (Total)	.13*		.17**	
Race	-.23***		-.13*	
Biological Sex	-.21***		-.14*	
Life Stressors (Total) * Family Support	-.02	.13	-.02	.08
Family Support	-.11		-.12	
Life Stressors (Total)	.12		.15*	
Race	-.24***		-.15*	
Biological Sex	-.21***		-.14*	
Life Stressors (Total) * Significant Other Support	-.06	.13	-.03	.07
Significant Other Support	-.09		-.06	
Life Stressors (Total)	.14*		.18**	
Race	-.22***		-.13*	
Biological Sex	-.21***		-.14*	
Life Stressors (Total) * Friend Support	.03	.12	.05	.07
Friend Support	.03		.06	
Life Stressors (Total)	.14*		.18**	
Race	-.22***		-.13*	
Biological Sex	-.22***		-.14*	

*** $p < .001$

** $p < .01$

* $p < .05$

Table 4.2

Multiple Regression Results for Life Stressors (Impact) and Social Support

Independent Variables	Total Drinks over 2 Weeks		Most Drinks over 2 Hours	
	Beta	R^2	Beta	R^2
Life Stressors (Impact) * Social Support (Total)	-.04	.11	-.02	.05
Social Support (Total)	-.08		-.06	
Life Stressors (Impact)	.07		.11	
Race	-.23***		-.14*	
Biological Sex	-.22***		-.15*	
Life Stressors (Impact) * Family Support	.002	.12	.003	.07
Family Support	-.12		-.13*	
Life Stressors (Impact)	.06		.10	
Race	-.23***		-.14*	
Biological Sex	-.22***		-.15*	
Life Stressors (Impact) * Significant Other Support	-.06	.12	-.06	.06
Significant Other Support	-.09		-.06	
Life Stressors (Impact)	.07		.11	
Race	-.22***		-.13*	
Biological Sex	-.22***		-.15*	
Life Stressors (Impact) * Friend Support	.01	.11	.03	.06
Friend Support	.05		.07	
Life Stressors (Impact)	.08		.12	
Race	-.21**		-.13*	
Biological Sex	-.23***		-.15*	

*** $p < .001$

** $p < .01$

* $p < .05$

Discussion

The purpose of this study was to gain a better understanding of the relationship between life stress, social support, and alcohol consumption. We found that both life stressors and family support were significantly associated with alcohol consumption. Higher total life stressors were associated with higher

alcohol consumption, and higher family support was associated with lower alcohol consumption. This was true for both alcohol consumption measures (over the course of a typical week, and over the course of a two-hour period). These findings suggest that individuals with high life stress or low family support not only drink more over a typical week, but they also engage in more intense binge drinking sessions than those with lower life stress or higher family support.

Most of the referenced studies only measured the overall frequency of drinking, similar to our measure of drinks over a typical week (Hamdan-Mansour et al., 2005; Steptoe et al., 1996; Veenstra et al., 2007). While this gives us an idea of how average drinking patterns look, we also measured the greatest number of drinks consumed over a two-hour period to better examine the ways that life stress can influence binge drinking behaviors. Because binge drinking in emerging adulthood is associated with higher risk for AUD, it is important to consider variables that are associated with heavier binge episodes (Addolorato et al., 2018; Gowin et al, 2017). Targeting them can potentially decrease the likelihood of developing AUD.

For the most part, these findings are consistent with previous literature. Life stressors have been observed to have a positive relationship with alcohol consumption across several studies and reviews (Keyes et al., 2011; Dawson et al., 2005; Salgado García et al., 2020), and our findings were similar. However, because the literature is mixed on how different types of social support are related to alcohol consumption, our findings add to this body of research by highlighting

the importance of family support. There are some existing studies that find family support to be particularly influential on alcohol consumption (Pachi et al., 2021; Hamdan-Mansour et al., 2007), but other studies have found that friend support (Groh et al., 2007) and significant other support (Jarnecke & South, 2014) are more important. More research is needed to better understand these relationships.

Surprisingly, we did not find that social support moderated the relationship between life stressors and alcohol consumption in our sample. This was unexpected because life stressors (Keyes et al., 2011; Dawson et al., 2005; Salgado García et al., 2020) and social support (Groh et al., 2007; Steptoe et al., 1996) have a well-established relationship with alcohol consumption in the literature. However, the literature on the stress-buffering hypothesis of social support has been mixed (Eisenbarth, 2020), so there is less support for the moderating role of social support in this relationship. It is possible that our study did not find support for moderation due to limitations in our sample, which had relatively low levels of life stressors, high levels of social support, and low levels of alcohol consumption. It is likely that more research is needed to establish this relationship in the literature.

Certain limitations of this study can be addressed in future research. One limitation was that this sample had a large number non-drinkers (n = 127; roughly 48% of the sample). The average number of drinks consumed over a typical week in this study was around 3 drinks, and the average number of drinks consumed over two hours was less than 2 drinks. In the United States, heavy drinking is

considered to be 15 or more drinks in a week for men, and 8 or more drinks for women. A binge drinking episode is considered to be 5 or more drinks in a 2-hour period for men and 4 or more for women (U.S. Department of Health and Human Services, 2023). By these standards, our sample fell far below the threshold for heavy drinking and binge drinking. Further, data published by the US Department of Health and Human Services (2019) during the years of our data collection (2017 – 2018) shows that roughly 80% of adults aged 18 to 25 have engaged in alcohol use, with 74% engaging over the past year, and 56% during the past month. These percentages indicate that our sample's drinking behaviors fell below the national average. Future studies might consider recruiting more heavy drinkers to gain a better understanding of how these relationships look in individuals who consume more alcohol.

Similarly, the study could be stronger if there was a more even distribution of participants across ages—more than 50% of participants were 18-19 years old; more than 75% were below the age of 21. Including more participants at or above the legal drinking age could change the results as they have greater access to alcohol and may have different consumption patterns. For example, one study showed that while the number of drinks consumed during one occasion decreases after age 21, frequency of drinking occasions increases (Casswell et al., 2002). Additionally, because of the cross-sectional design, we cannot infer causation from these results. Finally, our sample may be underpowered to detect a moderating effect, as this type of analysis often requires a very large sample size.

Despite these limitations, ours is the first study to our knowledge to test the moderating effects of different types of social support on the relation between life stressors and alcohol consumption in a diverse sample of emerging adults. The results of this study highlight the importance of buffering the negative effects of life stressors and bolstering the positive effects of family support to decrease alcohol consumption in emerging adults. These might be considered when developing alcohol prevention and intervention programs as it could potentially decrease hazardous drinking behaviors and subsequent AUD risk. Future studies might consider exploring these relationships in an older sample of emerging adults with heavier drinkers to better understand how life stress and social support are associated with alcohol consumption.

References

Addolorato, G., Vassallo, G. A., Antonelli, G., Antonelli, M., Tarli, C., Mirijello, A., Agyei-Nkansah, A., Mentella, M. C., Ferrarese, D., Mora, V., Barbàra, M., Maida, M., Cammà, C., Gasbarrini, A., & Alcohol Related Disease Consortium* (2018). Binge Drinking among adolescents is related to the development of Alcohol Use Disorders: results from a Cross-Sectional Study. Scientific reports, 8(1), 12624. https://doi.org/10.1038/s41598-018-29311-y

American Psychological Association. (n.d.). *APA Dictionary of Psychology*. American Psychological Association. Retrieved January 20, 2023, from https://dictionary.apa.org/social-support

American Psychological Association. (n.d.). *APA Dictionary of Psychology*. American Psychological Association. Retrieved May 2, 2023, from https://dictionary.apa.org/life-stress

Blume, A. W., Lovato, L. V., Thyken, B. N., & Denny, N. (2012). The relationship of microaggressions with alcohol use and anxiety among ethnic minority college students in a historically White institution. Cultural Diversity and Ethnic Minority Psychology, 18(1), 45–54. https://doi-org.ezproxy.depaul.edu/10.1037/a0025457

Carbia, C., Cadaveira, F., Caamaño-Isorna, F., Rodríguez-Holguín, S., & Corral, M. (2017). Binge drinking during adolescence and young adulthood is

associated with deficits in verbal episodic memory. *PLoS ONE*, *12*(2). https://doi-org.ezproxy.depaul.edu/10.1371/journal.pone.0171393

Casswell, S., Pledger, M., & Pratap, S. (2002). Trajectories of drinking from 18 to 26 years: Identification and prediction. Addiction, 97(11), 1427–1437. https://doi-org.ezproxy.depaul.edu/10.1046/j.1360-0443.2002.00220.x

Conn, B. M., Ejesi, K., & Foster, D. W. (2017). Acculturative stress as a moderator of the effect of drinking motives on alcohol use and problems among young adults. Addictive behaviors, 75, 85–94. https://doi.org/10.1016/j.addbeh.2017.06.017

Dawson, D. A., Grant, B. F., & Ruan, W. J. (2005). The association between stress and drinking: Modifying effects of gender and vulnerability. Alcohol and Alcoholism, 40(5), 453–460. https://doi-org.ezproxy.depaul.edu/10.1093/alcalc/agh176

Dixon, W. J., & Tukey, J. W. (1968). Approximate Behavior of the Distribution of Winsorized t (Trimming/Winsorization 2). Technometrics, 10(1), 83–98. https://doi.org/10.2307/1266226

Eisenbarth, C. A. (2020). Stress and Alcohol Use among College Students: The Moderating Role of Social Support. Journal of Behavioral & Social Sciences, 7(1), 33–40.

Gowin, J. L., Sloan, M. E., Stangl, B. L., Vatsalya, V., & Ramchandani, V. A. (2017). Vulnerability for alcohol use disorder and rate of alcohol

consumption. The American Journal of Psychiatry, 174(11), 1094–1101. https://doi-org.ezproxy.depaul.edu/10.1176/appi.ajp.2017.16101180

Groh, D. R., Jason, L. A., Davis, M. I., Olson, B. D., & Ferrari, J. R. (2007). Friends, Family, and Alcohol Abuse: An Examination of General and Alcohol-Specific Social Support. The American Journal on Addictions, 16(1), 49–55. https://doi-org.ezproxy.depaul.edu/10.1080/10550490601080084

Hamdan-Mansour, A.M., Puskar, K. & Sereika, S.M. Perceived Social Support, Coping Strategies and Alcohol Use among Rural Adolescents/USA Sample. Int J Ment Health Addiction 5, 53–64 (2007). https://doi.org/10.1007/s11469-006-9051-7

Jarnecke, A. M., & South, S. C. (2014). Genetic and environmental influences on alcohol use problems: Moderation by significant other support, but not family or friend support. Alcoholism: Clinical and Experimental Research, 38(2), 367-375.

Keyes, K.M., Hatzenbuehler, M.L. & Hasin, D.S. Stressful life experiences, alcohol consumption, and alcohol use disorders: the epidemiologic evidence for four main types of stressors. Psychopharmacology 218, 1–17 (2011). https://doi.org/10.1007/s00213-011-2236-1

Kuntsche, E., Kuntsche, S., Thrul, J., & Gmel, G. (2017). Binge drinking: Health impact, prevalence, correlates and interventions. *Psychology & Health*,

32(8), 976–1017. https://doi-org.ezproxy.depaul.edu/10.1080/08870446.2017.1325889

Lewis, M. A., & Neighbors, C. (2004). Gender-specific misperceptions of college student drinking norms. Psychology of Addictive Behaviors, 18(4), 334.

Pachi, A., Baras, S., Anagnostopoulou, M., Roubi, A., Papageorgiou, S., Drakouli, V., Papanastasiou, A., & Tselebis, A. (2021). P.0014 Alcohol use, anger, aggression, resilience, and family support during the Covid-19 lockdown in Greece. European Neuropsychopharmacology, 53, S11–S12. https://doi.org/10.1016/j.euroneuro.2021.10.022

Pérez-García, J. M., Suárez-Suárez, S., Doallo, S., & Cadaveira, F. (2022). Effects of binge drinking during adolescence and emerging adulthood on the brain: A systematic review of neuroimaging studies. *Neuroscience and Biobehavioral Reviews*, *137*. https://doi-org.ezproxy.depaul.edu/10.1016/j.neubiorev.2022.104637

Pittman, D. M., Brooks, J. J., Kaur, P., & Obasi, E. M. (2019). The cost of minority stress: Risky alcohol use and coping-motivated drinking behavior in African American college students. Journal of ethnicity in substance abuse, 18(2), 257–278. https://doi.org/10.1080/15332640.2017.1336958

Sacco, P., Bucholz, K. K., & Harrington, D. (2014). Gender differences in stressful life events, social support, perceived stress, and alcohol use among older adults: Results from a national survey. *Substance Use &*

Misuse, *49*(4), 456–465. https://doi-org.ezproxy.depaul.edu/10.3109/10826084.2013.846379

Salgado García, F., Bursac, Z., & Derefinko, K. J. (2020). Cumulative Risk of Substance Use in Community College Students. American Journal on Addictions, 29(2), 97–104. https://doi-org.ezproxy.depaul.edu/10.1111/ajad.12983

Steptoe, A., Wardle, J., Pollard, T. M., & Canaan, L. (1996). Stress, social support and health-related behavior: A study of smoking, alcohol consumption and physical exercise. Journal of Psychosomatic Research, 41(2), 171–180. https://doi-org.ezproxy.depaul.edu/10.1016/0022-3999(96)00095-5

U.S. Department of Health and Human Services (2019, August 20). *2018 NSDUH Annual National Report*. Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/report/2018-nsduh-annual-national-report

U.S. Department of Health and Human Services (2023). *Drinking levels defined*. National Institute on Alcohol Abuse and Alcoholism. https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking

U.S. Department of Health and Human Services (2023). *Understanding alcohol use disorder*. National Institute on Alcohol Abuse and Alcoholism. https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/understanding-alcohol-use-disorder

Veenstra, M. Y., Lemmens, P. H. H. M., Friesema, I. H. M., Tan, F. E. S., Garretsen, H. F. L., Knottnerus, J. A., & Zwietering, P. J. (2007). Coping style mediates impact of stress on alcohol use: A prospective population-based study. *Addiction*, *102*(12), 1890–1898. https://doi-org.ezproxy.depaul.edu/10.1111/j.1360-0443.2007.02026.x

White, A. M. (2020). Gender Differences in the Epidemiology of Alcohol Use and Related Harms in the United States. *Alcohol research : current reviews*, *40*(2), 01. https://doi.org/10.35946/arcr.v40.2.01

Wolfe, J., Kimerling, R., Brown, P., Chrestman, K., & Levin, K. (1997). The Life Stressor Checklist-Revised (LSC-R) [Measurement instrument]. Available from http://www.ptsd.va.gov

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric Characteristics of the Multidimensional Scale of Perceived Social Support. Journal of Personality Assessment, 55(3/4), 610–617. https://doi.org/10.1080/00223891.1990.9674095