IMPACT OF COVID-19 RELATED CHANGES IN EMPLOYMENT STATUS, DEPRESSION, AND ALCOHOL USE IN A SAMPLE OF UNIONIZED LEISURE & HOSPITALITY INDUSTRY WORKERS

By Perla Palomares

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Approved:

Sumner Sydeman, Ph.D., Chair

Steven Barger, Ph.D.

Nora Dunbar Ph.D.

ABSTRACT

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PERLA PALOMARES

COVID-19 devastated the US economy in March and April of 2020, decimating the workforce in the leisure and hospitality industries. Change in employment status, such as loss of employment, has previously been found to be associated with negative outcomes such as depression and hazardous alcohol use. The purpose of the present study is to investigate the relationship between current employment status (e.g., currently employed, or unemployed), current depression, and current hazardous alcohol use in a sample of employees from the leisure and hospitality industries. Participants included 1,106 individuals (58.8% female, M_{age} 49.58, SD = 10.96) with complete data on depression, binge drinking, heavy drinking, employment status, and gender. The prevalence of current major depression (29.2%) and binge drinking (26%) were substantial. As hypothesized, a significantly greater proportion of individuals who were currently unemployed (51.7%) were currently depressed compared to their employed counterparts (28%), $z = 3.87$, $p < 0.001$, (95% CI: [0.12, 0.36]). However, there were no differences between unemployed and employed participants on heavy drinking ($p = 0.62$) or binge drinking, $z = 1.57$, $p = 0.74$, (95% CI: [-0.21, 0.02]). Results are discussed, including limitations of the employment cell size for hazardous drinking analyses, which appears to be a function of the high rate of employment in the sample at the time of data collection in 2022. Ongoing survey research on mental health outcomes in hospitality industry employees, especially given high proportion of underrepresented and unempowered individuals, appears warranted.

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Introduction

Study Overview

First, data regarding the COVID-19 pandemic in general is summarized, focusing on unemployment for the U.S. economy at large, and specific to the leisure and hospitality industry and accommodation and food services sector, which will are described in this document below as simply the hospitality industry. Next, information is provided on individuals who are generally and largely employed in the leisure and hospitality industry. The following section describes mental health and alcohol use issues among such employees in this industry. Next, historical data on unemployment and its relationship to depression and alcohol use are reviewed, following a review on COVID-19 job loss and its relation to alcohol use and depression. Further, unemployment because of the COVID-19 pandemic, alcohol use, and depression among the leisure and hospitality industry and accommodation and food services sectors are reviewed.

The COVID-19 Pandemic

On March 11, 2020, the World Health Organization (WHO) declared that the novel Coronavirus outbreak (COVID-19) was a global pandemic (Cucinotta & Vanelli, 2020). On March 13, 2020, President Donald Trump declared COVID-19 a national emergency and various stay-at-home and lockdown measures, which varied state-by-state, were enacted to curb the spread of COVID-19 (The American Journal of Managed Care, 2021). Such measures included closing down or limiting capacity in businesses, particularly so in food service, hospitality, and casinos. An economic crisis developed immediately during this immediate lock-down phase with many Americans involuntarily losing their jobs, having reduced work hours, or being furloughed. In fact, the unemployment rate in the U.S rose from 4.4% to 14.7% and by April of 2020, total employment fell by 20.5 million (U.S Bureau of Labor Statistics, 2021). This

magnitude of job loss during March and April of 2020 was unprecedented since the end of World War II (Weber-Handwerker et al., 2020).

The hospitality industry was among one of the first industries affected by the pandemic due to the travel restrictions and shelter in place orders in order to curb the spread of COVID-19; it is predicted that it will be among the last to recover (Reza et al., 2020; Sonmez et al., 2020; Tappe & Luhby, 2020). This industry experienced the most job losses than any other private sector, 8.3 million jobs lost from January 2020 to July 2021 (Falk et al., 2021). Following this further, the restaurant industry, which is the second largest private sector industry in the United States and is responsible for the employment of one in every 30 Americans, was hit particularly hard by the COVID-19 pandemic (National Restaurant Association, 2021). By April of 2020, two out of three restaurant employees, a total of approximately eight million Americans, had lost their jobs or had been furloughed (National Restaurant Association, 2021). Thus, while COVID-19 devastated the overall US workforce in 2020, it resulted in crushing unemployment rates in these particular industries (Klein & Smith, 2021). Nevada in particular was hard hit with job losses, as 87.6% of all jobs lost were in the leisure, hospitality, and restaurant industry (Independent Restaurant Coalition, 2022; Siemaszko, 2020).

Easing Restrictions and Introduction of COVID-19 Vaccination

By mid-May of 2020, post-lockdown period, shutdown restrictions began to ease. While each U.S state varied their reopening procedures, Americans were coming out of the lockdown period and starting to return to businesses such as restaurants (Wu et al., 2020). From May 2020 and into 2021, and with the subsequent introduction of a COVID-19 vaccine in February of 2021 (U.S Department of Health & Human Services, 2021), the economy overall began to improve, including reductions in the U.S. unemployment rate overall (U.S Bureau of Labor Statistics,

2021). Despite the subsequent recovery in the US economy as of 2022, employment in the hospitality sector remained below pre-pandemic levels (Koeze & Marsh, 2022).

Employees in the Leisure and Hospitality Industry and Accommodation and Food Services Sector

The leisure and hospitality industry and accommodation and food services sector includes a broad category of fields such as lodging (hotel), food and drink services, casinos, and tourism, among others. The food and restaurant field alone, is the second largest private-sector employer, with the National Restaurant Association (NRA) supporting over 500,000 restaurant businesses and 15 million or 10% of the United States workforce (National Restaurant Association, 2021). Income for workers in the leisure and hospitality sector of the economy is low, making workers in this industry such as housekeepers, food servers, bartenders, and other workers in this industry economically vulnerable, even in the best of financial times (Lund et al., 2020). The average median annual income for those employed in food services is less than $40,000 per year (Lund et al., 2020). In fact, the National Bureau of Labor Statistics reported in May of 2020 that those in the food preparation and serving related occupations made a median annual income of approximately $25,500 (U.S Bureau of Labor Statistics, 2022). Those in the hospitality related sector (porters, laundry attendants, and housekeepers) make between an average of $26,780 and $28,920 (Hoff & Warren, 2022, U.S Bureau of Labor Statistics, 2023). Thus, involuntary employment change/job loss due to COVID-19 was particularly stressful and difficult for workers in the leisure and hospitality industry, as the shock of loss of income essentially occurred to this group that was least ready to weather changes in employment status (Lund et al., 2020).

Those employed in the leisure and hospitality industry are also economically vulnerable based on factors considered to be social determinants of health, including sociodemographic and socioeconomic factors (Lund et al., 2020; Sonmez et al., 2020). The leisure and hospitality industry typically employs individuals with lower educational attainment, and thus has disproportionate representation of African Americans, Hispanics, and immigrants; in fact, Hispanics represent over a quarter of total people employed in food and service jobs (Lund et al., 2020; Sonmez et al., 2020). Certain occupations such as guest room attendant/housekeepers and other "back of house" occupations, e.g., laundry worker, are primarily occupied by females, who are also an at-risk group for lower income as well as mental health outcomes such as depression (Hsieh et al., 2016). Immigrants and minorities already face several inequalities associated with social, political, economic, and environmental conditions; the language barriers among other interpersonal factors leave them vulnerable to occupational health and safety hazards, and overall unfair working conditions (Sonmez et al., 2020). Thus, the impact of COVID-19 on employment in these industries has had a particularly notable impact on individuals in these subgroups who are at a very particular high risk (Adler & Bhattachryya, 2021). The current sample of workers in the hospitality industry, both in "front of house" and "back of house" occupations, has strong representation in sampling of these various vulnerable groups.

Mental Health and Alcohol Use in the Hospitality Industry

Individuals employed in the leisure and hospitality industry have been found to display elevated rates of mental health problems. In fact, a 2007 report from the National Survey on Drug Use and Health revealed that occupations involving food preparation and/or serving reported some of the highest rates of depression, with 10.3% of employees in this sector

reporting a lifetime history of at least one major depressive episode (Andrea et al., 2018: Centers for Disease Control, 2023; Kalargyrou et al., 2022).

High rates of depression have also been noted in casino workers in general. Specifically, rates of past six-month major depression, based on a single-item survey question about major depressive episodes, was found to be 9.8% among casino workers (Shaffer et al., 1999). Similar findings of high levels of depression among casino employees were reported in a narrative literature review article assessing occupational health and safety among such employees (Clouser et al., 2018).

It has also been noted that individuals employed in this sector display high levels of hazardous alcohol use, operationally defined in several different methods compared to other U.S occupations (Bush & Lipari, 2015). Using data from the National Survey on Drug Use and Health (NSDUH), the rates of current heavy drinking, defined as drinking five or more alcoholic beverages on the same occasion on five or more days in the past month, was 11.8%, which is the third highest level of current heavy drinking after the professions of mining and construction (Bush & Lipari, 2015). Similar data from a survey of a large national restaurant and bar chain identified that 41% of the employee sample reported problem drinking and 21.4% indicated alcohol dependence (Moore et al., 2009). Similarly, high rates of problematic or heavy alcohol use have been reported in a qualitative analysis of casino cocktail servers (Bayard de Volo, 2003). Finally, data from casino workers indicates rates of current alcohol problems using a standard cutoff score on the four-item CAGE questionnaire identified a point prevalence of 11.5% of alcohol problems (Shaffer et al., 1999).

Employment Status, Depression, and Alcohol

Decades of empirical investigation has examined involuntary job loss and unemployment as an acute stressor and its association with subsequent psychological and behavioral struggles. There is a substantial literature noting an association between job loss and low psychological well-being, in particular depression (Brand, 2015; Warr, 1988). In fact, in a meta-analysis of 104 empirical studies examining employment status and mental health, unemployment was significantly associated with lower mental health, including depression, with a medium effect (McKee-Ryan et al., 2005). These authors suggest that future research on the topic include sociodemographic (e.g., age, gender) variables (McKee-Ryan et al., 2005). Further, they note that basic variables such as dates of data collection and location of data collection have been widely missing in studies, which should be included in future research (McKee-Ryan et al., 2005). In these respects, the current study answers these calls with a diverse sample and specifics of dates and location of data collection included. Further, in different meta-analysis including studies from 2005 to 2014 that focused on employed versus unemployed individuals and depressive symptoms in prospective, observational studies, it was found that those who were unemployed had a 19% increased risk for symptoms of depression compared to their employed counterparts (Kim & Von dem Kneseback, 2015).

Empirical investigation shows a consistent relationship between job loss, unemployment, and alcohol use in unemployed populations. For example, evidence of a link between changes in employment status during the recession of 2008/2009 and increased alcohol use was noted from the U.S National Alcohol Survey (NAS12), a nationally representative sample of adults in the United States (Mulia et al., 2014). More historic data noting a link between employment status and alcohol use can be found from the Epidemiologic Catchment Area Project with data from

1980 to 1985 (Catalano et al., 1993). Job loss that occurred during that time was associated with increased risk of DSM-III based alcohol abuse and/or dependence disorders (Catalano et al., 1993). Thus historically, job loss/unemployment has been found to be associated with greater levels of depression and hazardous alcohol use. However, the current study aims to fill the current gap in literature by surveying a population of individuals (e.g., minorities, bartenders, servers) who have historically suffered from alcohol use and depression and are currently facing unprecedented circumstances due to the impact of COVID-19 on unemployment.

COVID-19 Employment Status and Depression

Research from the early stages of the COVID-19 pandemic has found that those whose employment was negatively impacted suffered significant mental health impacts such as an increase in depression and/or depressive symptoms (Guerin et al., 2021). For example, in a nationally representative sample of the U.S civilian population, unemployment or underemployment during the acute phase (April and May of 2020) of the COVID-19 pandemic was significantly associated with higher rates of current major depression, assessed by the Patient Health Questionnaire-2 (Lee et al., 2021). This relationship was particularly strong for the subgroups of females, Hispanics, Blacks, younger individuals, and less educated individuals (Lee et al., 2021). Similarly, rates of current depression from a nationally representative sample surveyed in English in April and May of 2020 using the PHQ-8 identified an overall point prevalence of 28.6% for current depression, with the highest rates of 40.3% found for Hispanic/Latino participants (McKnight-Eily et al., 2021). Data collected from the Hispanic Community Health Study/Study of Latinos gathered from May 2020 to May 2021 using the PHQ-2 to assess current major depression; while rates of elevated depression (current major depression) are not reported for the entire sample, the point-prevalence by specific groups ranged

from a low of 5.9% for Mexican participants to a high of 18.2% for Puerto Rican participants (Isasi et al., 2023)

Similarly, findings from a nationally representative sample of the U.S. population surveyed in April of 2020 that assessed past two-week depressive symptomatology using the Beck Depression Inventory-2 found that individuals who lost their job reported significantly greater levels of depression compared to those individuals who had no change in employment (McDowell et al., 2021). While a systematic review of all published research on job loss and depression during COVID-19 lockdown period of March and April is beyond the scope of the current literature review, these two population-based studies consistently identify a relationship between COVID-19 job loss and depression. The current study is different in time frame in that data collection occurred several years into the COVID-19 pandemic, after the overall economy had stabilized.

Research from the early months of COVID-19 identified a strong relationship between change in employment and alcohol use. For example, in a sample of over 5,000 individuals surveyed during the first six months of COVID-19, hazardous alcohol use and alcohol dependence, assessed using the AUDIT, were significantly more prevalent in those who had lost their job (Killgore et al., 2021). In converse, participants from a national sample in the U.S who lost employment during COVID-19 actually consumed alcohol less frequently than those who maintained employment (Chartier et al., 2021).

Hospitality Industry Employees: Employment Status, Depression, and Alcohol Use

Empirical research specific to change in employment status that compares employed and unemployed participants on depression, and/or alcohol use in hospitality industry employees is definitely warranted, yet as of the current time is quite limited. For example, the sole published

study that examined COVID-19 employment status, depression and alcohol in restaurant or hospitality industry employees used MTurk for sampling, with no way of confirming whether participants who responded were in fact current or former workers in these industries (Bufquin et al., 2021). Given that the research financially compensated participants, it is certainly plausible that some participants simply took part in this study for financial compensation who were not in fact part of these industries. At the current time, no published empirical studies with confirmed employees, or former employees, examining COVID-19 related employment status, depression, and/or alcohol were located in the literature.

Current Study

The purpose of the current study was to investigate the relationship between current employment status (i.e., currently employed versus currently unemployed) during COVID-19, current levels of depression, and excessive alcohol use in a sample of leisure and hospitality employees. The current sample is thought to be particularly relevant to these questions given that employees in these industries also have been traditionally found to have elevated rates of depression, in part due to their at-risk status based on lower pay and sociodemographic factors such as increased representations of females, ethnic minorities, and immigrants (Lund et al., 2020; Sonmez et al., 2020). Similarly, sampling individuals in these employment sectors is thought to be particularly pertinent to answering these questions given that employees in the hospitality industry such as food servers, bartenders, and casino employees have been found to have higher rates of alcohol misuse (Bush & Lipari, 2015; Moore et al.,2009; Shaffer et al., 1999). Because of the large Hispanic presence in the leisure and hospitality industry, the present study included a Spanish language version of the survey to better represent Hispanic workers.

The following research questions are addressed in the current study:

1) What is the overall point prevalence of current clinical depression for the entire sample of leisure and hospitality employees?

2) What is the point prevalence of 30-day heavy alcohol use and binge drinking in this sample?

3) Are there differences in the proportion of current major depression between currently unemployed individuals compared to their currently employed counterparts?

4a) Are there differences in the proportion of heavy drinking between currently unemployed individuals compared to their currently employed counterparts?

4b) Are there differences in the proportion of binge drinking between currently unemployed individuals compared to their currently employed counterparts?

The resulting hypotheses for the current study are:

Hypothesis 1. A greater proportion of currently unemployed individuals will meet criteria for current major depression compared to their currently employed counterparts.

Hypothesis 2. A greater proportion of currently unemployed individuals will engage in hazardous alcohol use (heavy drinking and binge drinking) compared to their currently employed counterparts.

Method

Participants. The current study was approved by Northern Arizona University Institutional Review Board, confirmation #19115776-1. Data was collected between July of 2022 through August of 2022. The initial sample was comprised of 1,920 individuals who were currently or previously employed in the hospitality sector in the state of Nevada.

The current sample was chosen for several reasons. Employees in the leisure and hospitality industry are important to investigate, from a psychological and behavioral

perspective, given their economic vulnerability in general, and even more so currently due to involuntary job loss during the COVID-19 employment crisis (Romeo, 2020). Further, employees in these industries have a high representation of females, racial and ethnic minorities, and immigrant workers, all vulnerable subgroups (Lund et al., 2020; SAMHSA, 2007; Sonmez et al., 2020). Finally, among employees in the leisure and hospitality industry, such as food servers, rates of depression and hazardous alcohol use are relatively high (Bush & Lipari, 2015; Shigihara 2020).

Measures

The survey was available in two languages, English and Spanish, which are presented in Appendix A and B, respectively.

Sociodemographic Variables and Socioeconomic Variables. Participants were surveyed about: age, gender (male, female, transgender, none of the above), race, ethnicity (Hispanic/non-Hispanic), languages spoken at home, marital/relationship status, education, income, home ownership, household size (number of individuals living in the household), employment status, and current health insurance status. These measures were adapted from standard surveillance systems such as the Centers for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS, 2020). Participants were also asked about profession/occupation (e.g., food server, guest room attendant/housekeeping), labor union status, and health insurance status.

Several other questions regarding employment status and the COVID-19 pandemic were designed by the researchers for the current study. An initial question asked about COVID-19 disruption in work continuity due to COVID-19 (e.g., continuously employed, working reduced hours, laid off). For participants who had experienced any change in employment status, follow-

up questions were provided regarding length of work interruption in months, continuous or alternating work interruption, currently looking for work, reasons for non-return to work, and work amount (e.g., more, about right, less than you would like).

Patient Health Questionnaire (PHQ-9): To assess current major depression, the 9-item Patient Health Questionnaire (PHQ-9) was utilized (Kroenke et al., 2001). The PHQ-9 is among the most widely used self-report measures of depression and assesses each of the nine diagnostic symptoms that make up a major depressive episode, according the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013; Kroenke et al., 2016). These include feelings of depression, loss of interest/pleasure, change in appetite, change in sleep, guilt/worthlessness, problems concentrating, change in psychomotor pace, and suicidality. Response options assess frequency of symptoms over the past two weeks and include "not at all," "several days," "more than half of the days," or "nearly every day" (Pfizer, 1999). The PHQ-9 scores range from 0-27.

The PHQ-9 was scored with cutoffs for categories including: no depression; mild major depression, moderate major depression, and severe major depression for descriptive purposes. For these categories, score ranges are as follows: 0-9 indicating no depression, 10-14 indicating mild major depression, 15-19 indicating moderate major depression, and 20-27 indicating severe major depression (Kroenke et al. 2001). For hypothesis testing, a well-validated binary score using a validated clinical cut-off score (0 to nine, not depressed, 10 or greater, depressed) was employed (Kroenke et al., 2001). This cut score has been found to have impressive sensitivity (88%) and a specificity (85%) in a sample in which criterion-related validity was assessed using structured clinical interviews (Levis et al., 2019). The PHQ-9 has strong test-retest reliability, as well as excellent construct and factor structure reliability (Kroenke et al., 2016). For the current

study, the nine PHQ items had excellent internal consistency reliability assessed by Cronbach's alpha statistic, $\alpha = .91$.

Behavioral Risk Surveillance System- Alcohol Use. To assess alcohol drinking habits four items from the Behavioral Risk Factor Surveillance System (BRFSS, 2020) were used. The alcohol specific questions included from the BRFSS all ask about the last 30 days, which is considered a typical time frame for current alcohol use. The first item queries about frequency of alcohol use in the past 30 days: *"How many days did you have at least one drink of any type of alcoholic beverage such as beer, wine, a malt beverage, or liquor?"* Response options range from zero to 30. The second item queries about intensity, that is, average number of drinks on days the participant drank over the past 30 days: *"One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days on the days that you drank, how many drinks did you drink on average."* Response options from 0-30. The final question focuses on binge drinking in the past 30 days, with different criteria used for males and females. For males, the item is worded *"Considering all types of alcoholic beverages, how many times during the past 30 days did you have 5 or more drinks on an occasion?"* For females, the item is worded, *"Considering all types of alcoholic beverages, how many times during the past 30 days did you have 4 or more drinks on an occasion?"* The response options range from 0 days to 30 days.

Two excessive alcohol use variables were calculated. Heavy alcohol use (or heavy drinking), which is a binary variable (e.g., heavy drinker/not), was assessed because heavy drinking is important to assess as it is associated with longer-term health problems (Dwyer-Lindgren et al., 2015). Heavy drinking status was assessed by first calculating average daily consumption for participants multiplying 30-day frequency of alcohol use (possible range 0 to

30) by average quantity of alcohol taken on those drinking days (possible range 0 to 30 drinks). Clinical cutoff scores were based on validated sex-specific definitions for heavy drinking, which are: for women, drinking more than one drink on average per day in the last 30 days, while for men drinking more than two drinks per day on average per day in the last 30 days (Dwyer-Lindgren et al., 2015).

Binge drinking was assessed using an item from the BRFSS that has sex-specific norms (sex-specific questions). Women were classified as binge drinkers if they endorsed drinking 4 or more drinks on at least one occasion in the past 30 days. Similarly, men were classified as binge drinkers if the endorsed drinking 5 or more drinks on at least one occasion in the past 30 days.

Extra-Thesis Questions. The current survey included questions for several variables that are extra-thesis, that is, not included in data analysis for the current project. Questions were on topics such as self-rated health and several measures of social relationships and social support.

Procedure

The current study was a cross-sectional, observational design. Participants were recruited through a non-random convenience sample of current or former employees in the leisure and hospitality industry in the state of Nevada. The survey was completed online and hosted on Qualtrics. For any questions related to frequency, pull-down menus were utilized for responses whenever possible, rather than open-ended questions, to attempt to minimize missing data. On average, the median time to complete the survey was approximately 9 minutes.

The procedures and design were established with the assistance of the Director of Communications and Digital Strategy for the Culinary Workers Union Local 226, given their expertise and experience surveying the union and other groups of employees in Nevada in the

hospitality industry (e.g., Bartenders Union Local 165, and also employees of station casinos in Nevada, whose employees are not unionized).

The procedure for data collection occurred as follows: the Director of Communications and Digital Strategy forwarded a brief message to union members of Culinary Workers Union Local 226 and Bartenders Workers Union Local 165, and non-union members (e.g., Station Casino employees) via text message and emails which included an introduction to the study and the link to the survey. These messages were written in both English and Spanish. The survey was distributed via text and email on four occasions, as follows: the first email was sent on July 13, 2022, the second on July 27, 2022, the third on August 3, 2022, and then on August 13, 2022. The text messages were sent on July 13 and 27 of 2022 and on August 3 and 20 of 2022. Further, the same brief message and link to the survey was published on social media outlets for the unions such as Instagram and Facebook, three posts on Facebook on July 23, 2022, and then on August 3 and 19 of 2022. Finally, the post appeared five times on Instagram on the dates of July 23, 2022, August 5, 13, 19, and 26 of 2022. See Appendix C for the full message.

The brief message provided by the Director of Communications and Digital Strategy for the Culinary Workers Union Local 226 on the emails, text messages, and social media posts had a hyperlink that automatically directed participants to the survey hosted on Qualtrics. The first page consisted of a passive consent form. That is, participants read all the details about the study, and if they consented, they merely continued onto the first question of the survey. At the end of the survey, a debriefing form was included that contained information on community mental health resources and resources for alcohol use and abuse.

At the recommendation of the Director of Communications and Digital Strategy for the Culinary Workers Union Local 226, an altruism-based incentive process was included.

Specifically, participants were notified in the initial message that the NAU research team donated $2,000 to the Culinary Academy of Las Vegas Community Food Assistance Program and the Citizenship Project. It was the recommendation of Director of Communications and Digital Strategy for the Culinary Workers Union Local 226 in early consultation that such a message would likely increase response rates. The $2,000 was awarded by the Max Del Montel Williamson Memorial Graduate Psychology Research Award in the Psychological Sciences Department at Northern Arizona University to the current author to support the proposed study.

Skip logic was used for relevant questions in the survey. For example, if a participant endorsed experiencing no work disruptions, they would not receive follow up questions regarding the impact of work disruption (e.g., length of work interruption). Skip logic was also applied for questions regarding ethnicity and past 30-day alcohol use.

A formalized methodology was used to translate the survey to Spanish, which included translation and back-translation, which are validated methods used in research for survey translation. This method consisted of translating items from English to Spanish, then, re-translating back to the source language (English) (Tyupa, 2011). Once the text was back-translated into English, it was compared to the original document for any inconsistencies (Tyupa, 2011). This process was used for all questions written for the current survey. Items were translated and back translated by the current author who is a native Spanish speaker and one other native Spanish speaker unrelated to the current study. Two other native Spanish speakers who were unfamiliar with the items and the current study reviewed the items and confirmed the appropriateness of the wording. The rest of the items such as demographics, PHQ-9, alcohol, and cigarette use from national surveillance systems that include Spanish-translated items, were used in the current study.

Data Analyses

Statistical analyses were performed using IBM Statistical Package for the Social Sciences (SPSS) Version 28. The two-proportion *z*-test for hypothesis testing was conducted using an online calculator to analyze data (Psych Purdue Proportion Calculator, 2023).

Descriptive Statistics: Descriptive statistics such as frequencies, means, and standard deviations, were calculated for all relevant sociodemographic and socioeconomic variables and reported primarily in tabular format for the final analytic sample. Point prevalence statistics for the final analytic sample for current major depression, heavy drinking, and binge drinking for the total sample are provided with 95% confidence intervals. Point prevalence data for depression, heavy alcohol use, and binge drinking for hypothesis testing (e.g., by employment status) and by sex include 95% confidence intervals.

Hypothesis Testing Analyses: To test the first hypothesis that a greater proportion of unemployed participants would have current major depression compared to their currently employed counterparts, a two-tailed, two proportion *z* test was conducted. The assumptions of a two-proportion *z* test are that the two populations must be randomly sampled, the samples must be independent, and categorical (Social Science Statistics, 2023). The current sample violated the assumption of random sampling, as non-random convenience sampling was utilized. Cohen's *h* was calculated to determine effect size.

Hypothesis two states that a greater proportion of currently unemployed individuals will engage in hazardous alcohol use (heavy drinking and binge drinking) than their currently employed counterparts. Similar to hypothesis one, a two-proportion *z* test was conducted for binge drinkers. Cohen's *h* was calculated to determine effect size. Fisher's exact test, which is utilized when cell sizes are expected to be less than 5 (Field, 2018), was calculated to test the

hypothesis for heavy drinking, due to a cell size of less than five for heavy drinkers in the unemployed group cell.

Initially, multivariate analyses such as a multiple, hierarchical logistic regression were planned for the current sample. However, the cell size for the exposure variable, namely currently unemployed, was sufficiently small for both alcohol variables that this analytic plan was aborted, see below. Instead, only differences between males and females on the three dependent variables (depression, heavy drinking, and binge drinking) were analyzed. A two-proportion *z* test was conducted for each of these analyses.

Results

Sample Sociodemographic and Socioeconomic Variables

The initial sample consisted of 1,920 participants. Details on the exclusions that occurred leading to the final analytic sample are presented in Figure 1. One participant who completed the survey in English was removed for endorsing an age of under 18, leaving a total sample size of 1,919. To be included in the final analytic sample, participants had to have complete PHQ-9 scores (i.e., have provided valid responses on all 9 items). Participants also had to have valid data on questions used for each of the alcohol variables, heavy drinking, and binge drinking. Since these alcohol variables have gender specific cutoff scores, participants who identified as "transgender" or "other" were also excluded from the final analytic sample. Lastly, participants whose current employment status was "other," that is homemaker, student, or retired were also removed from analysis as the purpose of the thesis was to compare employed versus unemployed individuals on depression and hazardous alcohol use.

The final analytic sample consisted of 1,106 participants (58.8% female, 48% Hispanic, 47.3% White, M_{age} 49.58, SD = 10.96), 27.6% of whom completed the survey in Spanish.

Sample sociodemographic information is presented in Table 1. Thirty-eight percent endorsed the languages spoken at home as either only Spanish, more Spanish than English, or both languages equally. The most common occupations were food/cocktail server and/or bartender (31.4%), guest room attendant/housekeeping (23.6%), and other (21.7%). The proportion of the sample employed in "front of the house" positions (food/cocktail server, bartender, porter, bell person) was 40.3%, while "back of the house" employees represented 38.1% of the sample, leaving respondents who noted "other" out of this analysis. Participants who were labor union members were 94.9% of the sample, 85.5% members of Culinary Union 226 and 9.4% members of Bartenders Union 165, respectively. Finally, the vast majority of the sample (85.3%) currently had health insurance. In the final analytical sample, 94.8% (n = 1,048) reported being currently employed and 5.2% (n = 58) being currently unemployed. Five supplementary questions about COVID-19-related employment status were written for the current study. Data on those variables is located in Appendix D, which includes Table 5, summarizing the results of these variables.

Research Question 1. The first research question focused on the point prevalence of current major depression for the entire sample. For the analytic sample of participants in the leisure and hospitality industry in the current study, 29.2%, 95% CI: [26.5, 31.8] met current major depression criteria according to the PHQ-9 binary variable. Further, using established cutoff scores to evaluate levels of current major depression, of those 29.2% of participants positive for current major depression, 14.2% fell at a level of mild current major depression, 7.8% met criteria for moderate current major depression, and 7.2% met criteria for severe current major depression. See Table 2.

Research Question 2. The second research question focused on the point prevalence of binge drinking and heavy drinking. For the analytic sample of participants, the prevalence of binge drinking was 26%, 95% CI: [23.5, 28.4], and heavy drinking 7.9%, 95% CI: [6.3, 9.5].

Hypothesis 1. A two tailed, two proportion *z* test was conducted to test the hypothesis that a significantly greater proportion of currently unemployed individuals would have current major depression compared to their employed counterparts. This hypothesis was supported, with 51.7% 95% CI: [38.3, 64.8] of unemployed versus 28%, 95% CI: [25.4, 30.7] of employed participants meeting criteria for current major depression, $z = 3.87$, $p < .001$, 95% CI: [0.12, 0.36]. The effect size using Cohen's *h*, was $h = 0.49$, a small-to-medium effect (Cohen, 1988).

Hypothesis 2. Two analyses were proposed to be conducted to determine if the proportion of hazardous alcohol use was higher in unemployed participants compared to their employed counterparts. First, a two-tailed, two proportion *z* test was conducted to test the hypothesis that a significantly greater proportion of currently unemployed individuals would be heavy drinkers compared to their employed counterparts. However, due to small cell size (the cell size for unemployed heavy-drinking participants was 3), a Fisher's exact test was used. This test showed that there was not a significant difference in heavy drinking among currently employed individuals and those that were currently unemployed, $p = 0.62$. Thus, this hypothesis was not supported, with 5.2%, 95% CI: [0.0, 11.5] of unemployed versus 8%, 95%CI: [6.4, 9.6] of employed participants meeting criteria for heavy drinking.

Finally, a two-tailed, two proportion *z* test was conducted to test the hypothesis that a significantly greater proportion of currently unemployed individuals would be binge drinkers compared to their employed counterparts. Results indicated actually that a smaller proportion of unemployed participants were binge drinkers (17.2%, 95% CI: [8.2, 27.3]) compared to 26.5%,

95% CI: [23.8, 29.3] for employed participants. However, this difference was not significant for binge drinking, $z = 1.57$, $p = 0.74$, 95% CI: [-0.21, 0.02]. The effect size using Cohen's *h*, was $h = 0.23$, a small effect (Cohen, 1988).

Finally, sex differences on the variables of interest (depression and hazardous drinking) were examined and tested with two proportion *z* tests and Fisher's exact test. A significantly greater proportion of women (31.8%, 95% CI: [28.3, 35.4]) than men (25.4%, 95% CI: [21.4, 29.4]), met the criteria for current depression, $z = 2.31$, $p < 0.05$, 95% CI: [0.01, 0.12]. The effect size using Cohen's *h*, was $h = 0.14$, below the range of Cohen's (1988) convention for a small effect ($h = 0.2$). There was also a significant difference in binge drinking, with a significantly greater proportion of men (30.3%, 95% CI: [26.1, 34.9]) than women (23.1%, 95% CI: [19.9, 26.4]) meeting criteria for binge drinking, $z = 2.68$ $p < 0.05$, 95% CI: [0.12, 0.02]. The effect size using Cohen's *h*, was $h = 0.16$, below the range of Cohen's (1988) convention for a small effect ($h = 0.2$). However, there was not a significant difference in heavy drinking among sex for heavy drinking, $p = 1.00$, which was calculated using Fisher's exact test due to a cell size less than 5.

Discussion

The central purpose of this study was to examine current major depression and hazardous alcohol use among currently employed and currently unemployed leisure and hospitality employees. In the United States, individuals employed in the leisure and hospitality industry were hit particularly hard hit with loss of employment in March and April of 2020 due to COVID-19 (Falk et al., 2021). By 2022, the U.S economy had recovered as a whole, though employment in the hospitality sector remained at below pre-pandemic (Koeze & Marsh, 2022).

The timing of data was collection for the current study during the COVID-19 pandemic was summer of 2022.

The point prevalence rate for current major depression in the current sample was 29.2%. This rate found in the summer of 2022 is commensurate with that found in nationally representative samples of U.S adults previously with the PHQ-9, which were reported as 27.8% in 2020 and 32.8% in 2021 (Ettman, 2022). Similar rates of current major depression assessed using a short form of the PHQ-9 gathered in a nationally representative sample were ranging from 24.5% to 30.2% (Vahratian et al., 2021). At the current time, rates for comparison during the time frame of data collection for the current study, namely summer of 2022, do not yet appear to be available. However, overall, the rates of current major depression in the current study were elevated and appear to fall within the confidence intervals from nationally representative samples of U.S adults for whom data in 2020 and 2021 is available.

The point prevalence of current heavy drinking and binge drinking for the current study was 7.9% and 26%, respectively. Data from the 2022 BRFSS indicated that 6% of participants reported heavy drinking and 17% reported binge drinking (Centers for Disease Control, 2023). Thus, while heavy drinking in the current sample was marginally higher than that found in the BRFSS in 2022, the rate of binge drinking in the current sample was substantially higher than the 2022 national estimate. These elevated rates of binge drinking may be a function of the sample used in the current study, namely hospitality industry employees, as these groups are known in general to have higher rates of alcohol misuse (Bush & Lipari, 2015; Moore et al., 2009).

The first hypothesis in the current study was supported. A significantly greater proportion of unemployed participants (51.7%) were currently depressed compared to their employed counterparts (28%). These findings regarding involuntary job loss and depression are comparable

to historical data that has assessed the relationship between job loss and depression (Brand, 2015; Warr, 1988). The current study provides novel findings in terms of the time frame of sampling compared to prior research. That is, to date, virtually all published studies on this topic gathered data during the lockdown period of COVID-19 (typically March and April of 2020), whereas the current study collected data during the summer of 2022, over two years since the initial economic crisis of the COVID-19 pandemic.

The second hypothesis, that a greater proportion of unemployed participants would be heavier drinkers, and binge drinkers, compared to their employed counterparts, was not supported. In fact, though the proportions were not significantly different, the values were such that there was a greater proportion of employed participants who were heavy drinkers and binge drinkers compared to unemployed participants. These findings may be a function of a small cell size for the unemployed group of heavy drinkers (3). The cell size for binge drinkers who were currently unemployed was sufficient to conduct the planned *z* test but was also small (10), which again could have also resulted in an unreliable estimate. The results of the current study in terms of these alcohol variables should thus be interpreted cautiously due to this sampling limitation. The limited number of unemployed individuals in the sample, 58, is likely a function of timing, namely, by summer of 2022, there had been significant improvement in rates of employment in the hospitality sector. Further, the fact that the vast majority of the sample were labor union members likely heightened the experience of having such high employment rates at the time of data collection.

Strengths

The data from the current study has important implications for public health researchers and those in positions of leadership within the leisure and hospitality industry. As mentioned

previously, there are millions of individuals employed in this industry nationally. Further, the large majority of individuals employed in this industry are already vulnerable due to working in an industry with low wages, being ethnic and racial minorities, and including a substantial proportion of whom are women (Lund et al., 2020; Romeo, 2020; Sonmez et al., 2020). The current study shows that they are also at high risk for current depression and hazardous drinking behavior.

It appears that at this time there are very few peer-reviewed journal articles that have investigated depression, alcohol, and unemployment within the leisure and hospitality industry in the time frame of the scope of the COVID-19 pandemic. As mentioned, it is important that employees of the leisure and hospitality industry are assessed and researched for measures to be taken to help such individuals. Such individuals were already vulnerable before the pandemic due to low wages and immigration status, among many other variables, and since the onset of the COVID-19 pandemic this industry was one of the hardest hit in regard to job and wage losses (Lund et al., 2020; Romeo, 2020).

A strength of the current study was that the survey was available in English and Spanish, with 27.6% of the analytic sample completing the Spanish-language version of the survey. The Spanish-language version allowed participants who are usually not included in such studies to provide information regarding their employment, depression, and alcohol status during such a difficult time for most Americans. Finally, gathering data directly with the assistance of a representative of the largest labor union in Las Vegas and Reno likely resulted in the validity of the intended sampling, namely, actual leisure and hospitality industry employees. The substantial sample size is also seen as a strength of the current study, as well as heterogeneity of participants by age, sex, ethnicity, and race.

Limitations

A limitation of the current study was the timing of data collection in regard to the phenomenon of focus for the current study, namely, examining loss of employment as the exposure variable for the dependent variables of depression and hazardous alcohol use. The economic crisis of the COVID-19 pandemic was at its peak during March and April of 2020, and data collection for the current study occurred during July and August of 2022, twenty-seven months after the initial crisis. As noted, only around five percent of the sample was actually unemployed at the time of data collection. This appeared to present a particular problem with very small cell sizes for the two hazardous alcohol use variables, which likely resulted in unreliable prevalence estimates in regard to hypothesis testing.

Another limitation of the current study was the mean age of the entire sample (49.58), which can be seen as an older age group. The variables of interest in the current study (hazardous alcohol use, depression) are typically seem at much higher rates in younger individuals. For example, in 2019, the percentage of adults who experienced any symptoms of depression was highest for those between the ages of 18-29 (21%), followed by those aged 45-64 (18.4%) (Villarroel & Terlizzi, 2020). In 2020, the age group that experienced the most major depressive episodes was among those ages 18-25 (17%) followed by those ages 26 to 49 (9.1%), followed by those ages 50 or older (5.4%) (SAMHSA, 2023). Similarly, rates of hazardous alcohol use have been found to be higher among younger individuals, for example binge drinking is most common among adults aged 18-38 (Centers for Disease Control, 2023). Further, data on leisure, hospitality workers, and more specifically restaurant workers have found that those between the ages of 18-29 often engage in high rates of alcohol use (Moore et al., 2009). As mentioned, the

mean age of the current sample was 49.58, which does not encompass the age group which has historically been at higher risk of experiencing depression and hazardous alcohol use.

Future Directions

Individuals employed in the leisure and hospitality industry already faced significant socioeconomic and health challenges before the COVID-19 pandemic, and such challenges have been exacerbated by the pandemic. Conducting empirical research with such individuals should result in samples important to study including females, immigrant workers, and racial and ethnic minorities, such as Hispanics, who are vulnerable sub-groups. Future research should continue to focus on individuals employed in this industry and help in developing effective screening and interventions for depression and alcohol use. Furthermore, future studies should focus on how employment status, depression, and alcohol use, affect individuals in different age ranges. The current study could be seen as a model for future research in terms of accessing at-risk groups such as females, ethnic minorities, and immigrants, millions of whom are employed nationally in the U.S hospitality industry. Specifically, working in conjunction with labor-union representatives for the hospitality industry could provide inroads to data collection for these more challenging-to-reach individuals. Further, the results provided by researchers could be helpful for labor union representatives to better understand the challenges and needs of their membership, which could lead to intervention efforts targeted as particular groups or subgroups most in need. Finally, it is important for future longitudinal studies to continue to assess depression and alcohol use among individuals employed in this industry, and specific subgroups, given the unique impact the COVID-19 pandemic has had on them, and follow potential changes over time in these areas.

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Table 1

Baseline Characteristics of Participants for Total Sample and by Employment Status

	Currently Employed n = 1048 % or $\bar{x} \pm SD$	Not Currently Employed n = 58 % or $\bar{x} \pm SD$	Total Sample n = 1,106 % or $\bar{x} \pm SD$
Sex, % (*n*)			
Female	58.6% (614)	62.1% (36)	58.8% (650)
Male	41.4% (434)	37.9% (22)	41.2% (456)
Age, years, $\bar{x} \pm SD$	49.41 ± 10.92	52.61 ± 11.30	49.58 ± 10.96
Missing			1.1% (12)
Race, % (*n*)			
Black or African American	92.6% (125)	7.4% (10)	12.2% (135)
Asian	96.8% (91)	3.2% (3)	8.5% (94)
American Indian or Alaska Native	100% (15)	0% (0)	1.4% (15)
Native Hawaiian or Pacific Islander	95.2% (20)	4.8% (1)	1.9% (21)
White	94.6% (495)	5.4% (28)	47.3% (523)
Multiracial	97.3% (72)	2.7% (2)	6.7% (74)
Ethnicity, % (*n*)			
Hispanic	47.9% (453)	50% (27)	48% (480)
Missing			9.7% (107)
Language Spoken, % (*n*)			
Only Spanish	8.7% (89)	12.7% (7)	8.9% (96)
More English than Spanish	17% (174)	10.9% (6)	16.7% (180)
Both equally	12.5% (128)	14.5% (8)	12.6% (136)
More English than Spanish	10.3% (106)	12.7% (7)	10.5% (113)
Only English	51.6% (529)	49.1% (27)	51.4% (556)

Missing			2.3% (25)
Marital Status, % (*n*)			
Married- spouse in household	48.7% (502)	34.5% (2)	47.9% (522)
Married- spouse not in household	2.7% (28)	3.4% (2)	2.8% (30)
Widowed	5.7% (59)	8.6% (5)	5.9% (64)
Divorced	12.4% (128)	17.2% (10)	12.7% (138)
Separated	2.5% (26)	6.9% (4)	2.8% (30)
Never married	19% (196)	17.2% (10)	18.9% (206)
Living with a partner	8.9% (92)	12.1% (7)	9.1% (99)
Missing			1.5% (17)
Education, % (*n*)			
Up to grade 11	11.9% (121)	19% (11)	12.3% (132)
High school graduate	31.1% (317)	39.7% (23)	31.6% (340)
Some college/technical school	33.7% (343)	24.1% (14)	33.1% (357)
College graduate or higher	23.4% (238)	17.2% (10)	23% (248)
Missing			2.6% (29)
Income, % (*n*)			
< $10,000	4.9% (50)	26.8% (15)	6% (65)
$10,000-$19,999	4% (41)	12.5% (7)	4.4% (48)
$20,000-$34,999	21.4% (220)	26.8% (15)	21.7% (235)
$35,000-$49,999	25.9% (266)	14.3% (8)	25.3% (274)
$50,000-$74,999	19.7% (203)	7.1% (4)	19.1% (207)
$75,000-$89,999	10% (103)	8.9% (5)	10% (108)
$90,000-$99,999	4.9% (50)	1.8% (1)	4.7% (51)
>$100,000	9.2% (95)	1.8% (1)	8.9% (96)
Missing			2% (22)

Home Ownership, % (*n*)			
Rent an apartment	25.7% (269)	31% (18)	26% (287)
Rent a house	16% (167)	13.8% (8)	15.9% (175)
Rent a mobile home	1% (10)	5.2% (3)	1.2% (13)
Own a home/condo/townhome	50.4% (527)	34.5% (20)	49.6% (547)
Some other arrangement	6.9% (72)	15.5% (9)	7.3% (81)
Missing			0.3% (3)
Household size, $\bar{x} \pm SD$	3.21 ± 1.61	2.81 ± 1.68	3.19 ± 1.62
Missing			4.2% (46)
Survey Language, % (*n*)			
English	72.6% (761)	69% (40)	72.4% (801)
Spanish	27.4% (287)	31% (18)	27.6% (305)
Occupation, % (*n*)			
Guest room attendant/housekeeping	24% (250)	16.1% (9)	23.6% (259)
Cocktail server	6.5% (68)	5.4% (3)	6.5% (71)
Food server	14.6% (152)	17.9% (10)	14.8% (162)
Bartender	10.4% (108)	5.4% (3)	10.1% (111)
Porter	7.1% (74)	3.6% (2)	6.9% (76)
Bell person	1.9% (20)	3.6% (2)	2% (22)
Cook	9.3% (97)	10.7% (6)	9.4% (103)
Kitchen worker	2.6% (27)	0% (0)	2.5% (27)
Laundry worker	2.6% (27)	3.6% (2)	2.6% (29)
Other	21% (219)	33.9% (19)	21.7% (238)
Missing			0.7% (8)
Union membership, % (*n*)			
Member of culinary union 226	85.9% (848)	76.5% (39)	85.5% (887)

Member of bartender union 165	9.5% (94)	7.8% (4)	9.4% (98)
Station casino employee/non-union	2.5% (25)	0% (0)	2.4% (25)
None of the above	2% (20)	15.7% (8)	2.7% (28)
Missing			6.1% (68)
Health insurance coverage % (*n*)			
Yes	86.3% (841)	66% (35)	85.3% (876)
No	13.7% (133)	34% (18)	14.7% (151)
Missing			7.1% (79)

Note: Results are percentages and N for categorical variables and mean ($\bar{x}$) ± standard deviation (SD) for continuous variables.

Table 2

PHQ-9 Current Major Depression Categories for the Entire Sample and by Employment Status

	Currently Employed *n* = 1048	Not Currently Employed *n* = 58	Total Sample *n* = 1,106
No Depression	72% (755)	48.3% (28)	70.8% (783)
Major Depression, Mild	13.8% (145)	20.7% (12)	14.2% (157)
Major Depression, Moderate	7.5% (79)	12.1% (7)	7.8% (86)
Major Depression, Severe	6.6% (69)	19% (11)	7.2% (80)

Table 3

Proportion of PHQ-9 Current Major Depression, Heavy Alcohol use, and Binge Drinking by the Entire Sample and Employment Status

	Currently Employed *n* = 1048	Not Currently Employed *n* = 58	Total Sample *n* = 1,106
Current Depression PHQ-9 ≥10 %	28% (293)	51.7% (30)	29.2% (323)
Heavy Drinking %	8% (84)	5.2% (3)	7.9% (87)
Binge Drinking %	26.5% (278)	17.2% (10)	26% (288)

Table 4

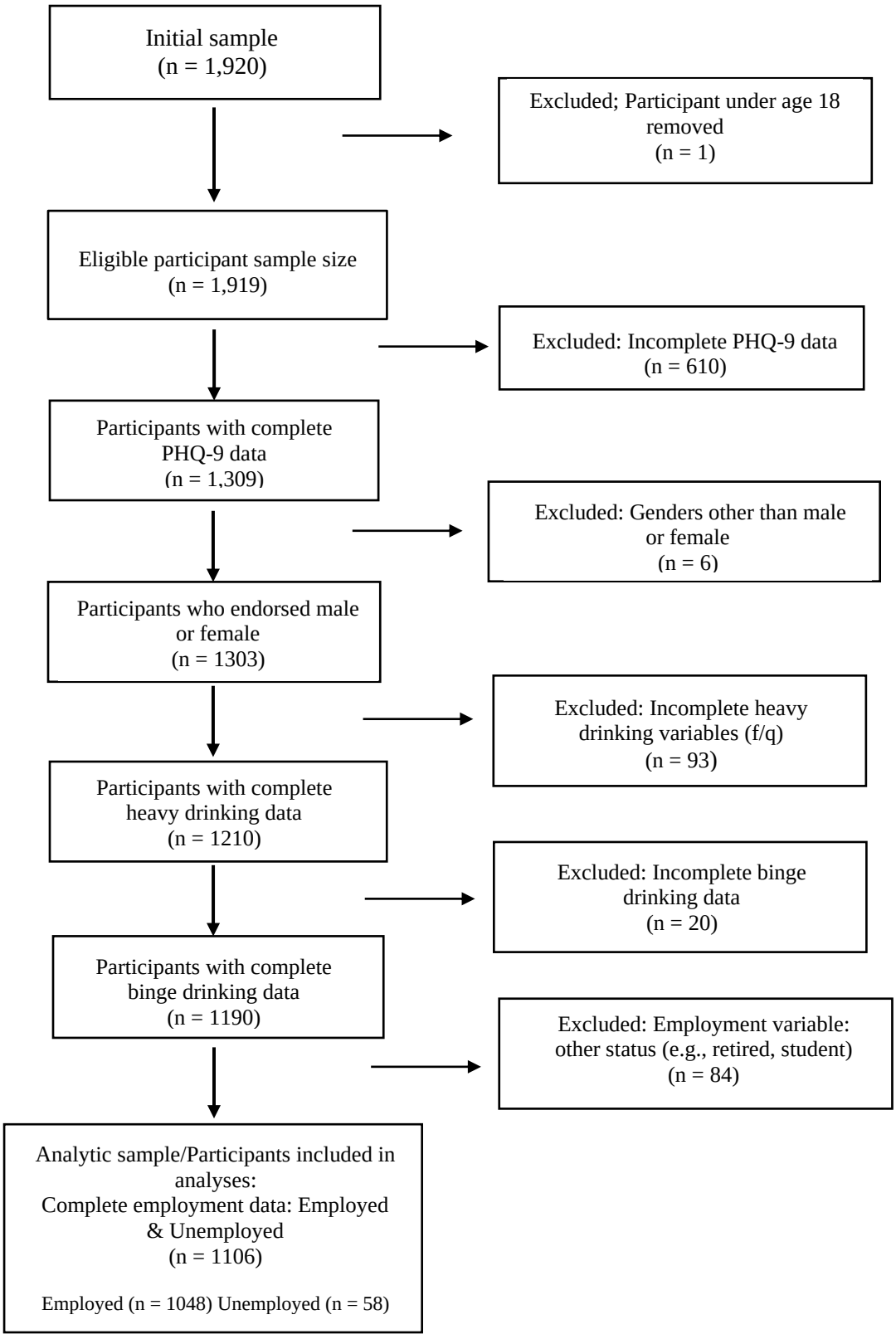
PHQ-9 Depression and Alcohol Status by Gender and Independent Samples z Test

	Females *n* = 650	Males *n* = 456	*z* statistic (or Fisher's Exact)
Current Depression PHQ-9 ≥10	31.8% (207)	25.4% (116)	$z = 2.31$ $p < 0.05$
Heavy Drinker	7.2% (47)	8.8% (40)	*p = 1.00*
Binge Drinker	23.1% (150)	30.3% (138)	$z = 2.68$ $p < 0.05$

Note: The following table shows current depression

Figure 1

Flowchart of Participant Retention



Note: Flowchart depicting decisions on which participants were removed and retained for the final analytical sample.

Appendix A

SOCIODEMOGRAPHIC QUESTIONS

What is your age?

What is your gender identity?

Male

Female
Transgender
None of these

Ethnicity

Hispanic or Latino
Not Hispanic or Latino

Please select the group(s) that represent your Hispanic origin or ancestry: (Select all that apply)

Mexican
Mexican American

Central or South American
Puerto Rican
Cuban/Cuban American
Dominican (Republic)
Other Latin American
Other Hispanic/Latina/o/Spanish

What language(s) do you usually speak at home? (Select one)

Only Spanish
More Spanish than English
Both equally
More English than Spanish
Only English

What other languages do you speak at home?

Amharic
Chinese
Tagalog
another language not listed above

Race (Select all that apply)

Black or African American
Asian
American Indian or Alaska Native
Native Hawaiian or Other Pacific Islander
White
Other
Multiracial

What is your current marital status?

Married - spouse in household
Married - spouse not in household
Widowed
Divorced
Separated
Never married
Living with a partner

What is the highest grade or year of school you have completed?

Up to grade 11 but not a high school graduate
High school graduate (Grade 12 or GED)
Some college technical school
College graduate or higher

Please estimate your total household income: (before taxes)

Less than $10,000
$10,000 - $19,999
$20,000 - $34,999
$35,000 - $49,999
$50,000 - $74,999
$75,000 - $89,999
$90,000 - $99,999
More than $100,000

Do you rent or own a home?

- I rent an apartment
- I rent a house
- I rent a mobile home
- I own my home/condo/townhouse
- Some other arrangement

How many people including yourself, live in your household?

What is your current working status?

- Employed for wages
- Self-employed
- Out of work for 1 year or more
- Out of work for less than 1 year
- A homemaker
- A student
- Retired
- Unable to work

The following questions refer to your employment status since the start of the COVID-19 pandemic, that is, from March 2020 to the present.
We understand that work status can change often over this time, but please choose the response that BEST describes your experience since the pandemic.

- Continuously employed
- Working reduced hours
- Laid off
- Furloughed
- Terminated
- Other (please describe)

In total, for how many months did this work interruption last?

During this time, was this disruption for one stretch of time or did you go back and forth working and not working during this time?

- One continuous time period
- Alternating between working and non-working

Are you currently looking for work?

- No
- Yes

If you haven't returned to work, what has been the main reason?

- I have returned to work
- COVID-19 health concerns
- I cannot find a job
- Still on layoff and haven't been recalled to work

Are you currently working:

- More than you would like
- About the right amount
- Less than you would like

Which best describes your current job (or if you were furloughed or lost your job due to COVID-19, your work prior to furlough/job loss?)

- Guest room attendant/housekeeping
- Cocktail server
- Food server
- Bartender
- Porter
- Bell person
- Cook
- Kitchen worker
- Laundry worker
- Other

Select the category which best describes you:

- I am a member of The Culinary Workers Union Local 226
- I am a member of The Bartenders Local Union 165
- I am a Station Casino employee/non-union hospitality worker
- None of the above

PATIENT HEALTH QUESTIONNAIRE (DEPRESSION) [PHQ-9]

Over the last 2 weeks, how often have you been bothered by any of the following?

Little interest or pleasure in doing things?

Not at all
Several days
More than half the days
Nearly every day

Feeling down, depressed, or hopeless?

Not at all
Several Days
More than half the days
Nearly every day

Trouble falling or staying asleep, or sleeping too much?

Not at all
Several days
More than half the days
Nearly every day

Feeling tired or having little energy?

Not at all
Several days
More than half the days
Nearly every day

Poor appetite or overeating?

Not at all
Several days
More than half the days
Nearly every day

Feeling bad about yourself—or that you are a failure or have let yourself or your family down?

Not at all
Several days
More than half the days
Nearly every day

Trouble concentrating on things, such as reading the newspaper or watching television?

Not at all
Several days
More than half the days
Nearly every day

Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual?

Not at all
Several days
More than half the days
Nearly every day

Thoughts that you would be better off dead or of hurting yourself in some way?

Not at all
Several days
More than half the days
Nearly every day

GENERAL ANXIETY SCALE (GAD-2)

Over the last 2 weeks, how often have you been bothered by the following problems?

Feeling nervous, anxious, or on edge?

Not at all
Several days
More than half the days
Nearly every day

Not being able to stop or control worrying?

Not at all
Several days
More than half the days
Nearly every day

ALCOHOL USE- BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

During the past 30 days:
How many days did you have at least **one drink** of any type of alcoholic beverage such as beer, wine, a malt beverage, or liquor?
[NOTE: A 40-ounce beer would count as 3 drinks, or a cocktail drink with 2 shots would count as 2 drinks]

During the past 30 days,
On the days that you drank, how many drinks did you drink on the average?
[NOTE: One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor]

Considering all types of alcoholic beverages, how many times during the past 30 days did you have **5 or more drinks** on an occasion?

Considering all types of alcoholic beverages, how many times during the past 30 days did you have **4 or more drinks** on an occasion?

SMOKING HABITS- BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

Have you smoked at least 100 cigarettes in you ENTIRE LIFE?
Note: 100 cigarettes = 5 packs
- No
- Yes

Do you NOW smoke cigarettes every day, some days or not at all?
- Every day
- Some days
- Not at all

On how many of the **past 30 days** did you use an electronic vaping product?

SOCIAL RELATIONSHIP RESOURCE ITEMS

Would you say that in general your health is:

- Excellent
- Very good
- Good
- Fair
- Poor

How often do you feel that you lack companionship?

- Hardly ever
- Some of the time
- Often

How often do you feel left out?

- Hardly ever
- Some of the time
- Often

How often do you feel isolated from others?

- Hardly ever
- Some of the time
- Often

In general, how often do you feel lonely?

- Always
- Usually
- Sometimes
- Never

BERKMAN SOCIAL NETWORK INDEX

In a typical week, how many times do you talk on the telephone with family, friends, or neighbors?

In a typical week, how many times do you have conversations (not necessarily on the phone; could be by video or text) with family, friends, or neighbors?

How often do you get together with friends or relatives? (per week)

How often do you attend church or religious services? (per year)

How often do you attend meetings of the clubs or organizations you belong to? (per year)

SOCIAL SUPPORT INDEX

Is there someone available to whom you can count on to listen to you when you need to talk?

None of the time
A little of the time
Some of the time
Most of the time
All the time

Is there someone available to you to give you good advice about a problem?

None of the time
A little of the time
Some of the time
Most of the time
All of the time

Is there someone available to you who shows you love and affection?

None of the time
A little of the time
Some of the time
Most of the time
All of the time

Is there someone available to help with daily chores?

None of the time
A little of the time
Some of the time
Most of the time
All of the time

Can you count on anyone to provide you with emotional support (talking over problems or helping you make a difficult decision)?

None of the time
A little of the time
Some of the time
Most of the time
All of the time

Do you have as much contact as you would like with someone you feel close to, someone in whom you can trust and confide in?

None of the time
A little of the time
Some of the time
Most of the time
All of the time

EXTRA SOCIODEMOGRAPHIC QUESTIONS

Are you taking any medicine for anxiety, depression or stress?

Yes
No

About how long has it been since you last saw a doctor or other health professional about your health?

Within the past year (anytime less than 12 months ago)
Within the last 2 years (1 year but less than 2 years ago)
Within the last 3 years (2 years but less than 3 years ago)
Within the last 5 years (3 years but less than 5 years ago)
Within the last 10 years (5 years but less than 10 years ago)
10 years ago or more

During the past 12 months was there any time when you needed medical care but did not get it because you couldn't afford it?

Yes
No

During the past 12 months have you delayed medical care because of worry about the cost?

Yes
No

Was there any time when you DELAYED getting medical care because of the coronavirus pandemic?

Yes
No

During the past 12 months, did you receive counseling or therapy from a mental health professional such as a psychiatrist, psychologist, psychiatric nurse, or clinical social worker?

Yes
No

Are you covered by any kind of health insurance or some other kind of health care plan?

Yes
No

What is your five-digit zip code?

Appendix B

SOCIODEMOGRAFICOS

¿Que edad tiene?

¿Cual es su identidad de genero?

- Masculino
- Femenino
- Transgénero
- Ninguno de esos

¿Es usted latino, o hispano, o de origen español?

- Hispano o Latino
- No Hispano o Latino

Seleccione los grupo(s) que representen su origen o ascendencia Hispana. (Seleccione todo lo que corresponda)

- Mexicano
- Mexicano Americano
- Centro o Sudamericano
- Puertorriqueño
- Cubano
- Dominicano
- Otro Latino Americano
- De otro origen Latino, Hispano, o Español

¿Qué idiomas suele hablar en casa? (Seleccione uno)

- Solo español
- Mas español que ingles
- Ambos por igual
- Mas ingles que español
- Solo inglés

¿Qué otros idiomas habla en casa?

- Amhárico
- Chino
- Tagalog
- Otro idioma no mencionado anteriormente

¿A cuál o cuales de las siguientes razas diría usted que pertenece? (Seleccione todo lo que corresponda)

- Negro o Afroamericano
- Asiatico
- Indioamericano o Nativo de Alaska
- Nativo de Hawai o otra isla del Pacífico
- Blanco
- Otro
- Multiracial

¿Es usted...?

- Casado- su pareja vive en casa
- Casado- su pareja no vive en casa
- Divorciado
- Viudo
- Separado
- Nunca estuvo casado
- Vive en pareja sin estar casado

¿Cuál es el nivel de educación o grado escolar más alto que ha completado?

- Hasta el grado 11 pero no un graduado de la escuela secundaria
- Graduado de secundaria (grado 12 o GED)
- Alguna escuela tecnica universitaria
- Graduado universitario o superior

Estime el ingreso total de su hogar: (antes de impuestos)

- Menos de $10,000
- $10,000 - $19,999
- $20,000 - $34,999
- $35,000 - $49,999
- $50,000 - $74,999
- $75,000 - $89,999
- $90,000 - $99,999
- Mas de $100,000

¿Vive en casa propia o rentada?

- Alquilo un apartamento
- Alquilo una casa
- Alquilo una casa rodante
- Soy dueño de mi casa/condominio
- Otra situación de vivienda

¿Cuántas personas, incluido usted mismo, viven en su hogar?

¿Actualmente usted es?

- Empleado asalariado
- Trabajador Independiente
- Desempleado por un año o mas
- Desempleado por menos de uno año
- Mujer o hombre que se ocupa de las tareas de la casa
- Estudiante
- Jubilado
- No puede trabajar

Entendemos que el estado de trabajo puede cambiar a menudo durante este tiempo, pero elija la respuesta que MEJOR describe su experiencia desde la pandemia.

- Empleado Continuo
- Trabajando horas reducidas
- Descansado
- Temporalmente Descansado
- Despedido
- Otro (Favor de describir)

¿En total, por cuantos meses occurio la interrupción en su trabajo?

¿La disrupción de trabajo fue de largo plazo o estuvo alternando entre tener trabajo y no tener trabajo?

- Fue de lago plazo
- Alternancia entre trabajar y no trabajar

¿Esta usted buscando trabajo actualmente?

- No
- Si

¿Si usted no ha regresado al trabajo, cual es la razón principal?

- Si he regresado al trabajo
- Por problemas de salud relacionados con el COVID-19
- No puedo encontrar trabajo
- Todavía estoy en despedido temporal, y no he sido llamado a trabajar

Actualmente esta trabajando:

- Mas de lo que le gustaria
- Mas o menos lo que le gustaria
- Menos de lo que le gustaría

¿En cual de la siguientes categorías esta su trabajo actual? (o si fue temporalmente descansado o perdió su trabajo debido a COVID-19, ¿su trabajo antes de la suspensión/pérdida de trabajo?)

- Encargado de la habitación de invitados/limpieza
- Servidor de cocteles
- Servidor de comida
- Camarero
- Portero
- Botones de hotel
- Cocinero
- Empleado de lavanderia
- Empleado de cocina
- Otro

Seleccione la categoría que mejor lo describa

- Soy miembro del Sindicato Local de Trabajadores Culinarios 226
- Soy miembro del Sindicato Local de Camareros 165
- Soy empleado de casino/trabajador de hospitalidad sin sindicato
- Ninguna de las anteriores

CUESTENARIO SOBRE LA SALUD DEL PACIENTE (PHQ- 9)

Durante las ultimas 2 semanas, ¿que tan seguido a tenido molestias debido a los siguientes problemas?

¿Poco interés o placer en hacer las cosas?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Se ha sentido decaído, deprimido, o sin esperanzas?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Ha tenido dificultad para quedarse o permanecer dormido, o ha dormido demasiado?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Se ha sentido cansado o con poca energía?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Sin apetito o ha comido en exceso?

Ningún día
Varios días
Mas de ls mitad de los días

Casi todos los días

¿Se ha sentido mal con usted mismo – o que es un fracaso o que ha quedado mal con usted mismo o con su familia?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Ha tenido dificultad para concentrarse en ciertas actividades, como leer el periódico o ver televisión?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Se ha movido o hablado tan lento que otras personas podrían haberlo notado? ¿O lo contrario – muy inquieto o agitado que ha estado moviéndose mucho mas de lo normal?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿Pensamientos de que estaría mejor muerto o de lastimarse de alguna manera?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

TRANSTORNO GENERAL DE ANSIEDAD (GAD-2)

Durante las ultimas 2 semanas, ¿que tan seguido ha tenido molestias debido a los siguientes problemas?

¿Se ha sentido nervioso, animoso, o con los nervios de punta?

Ningún día
Varios días
Mas de la mitad de los días
Casi todos los días

¿No ha sido capaz de parar o controlar su preocupación?

Ningún día
Varios día
Mas de la mitad de los días
Casi todos los días

BRFSS- CONSUMO DE ALCOHOL

En los últimos 30 días:
¿**Cuántos días** bebió **al menos un trago** de cualquier bebida alcohólica como cerveza, bebida a base de malta, o licor? [Una cerveza de 40 onzas equivaldria a 3 tragos; un coctel con dos medidas de alcohol equivaldria a 2 tragos]

En los últimos 30 días,
en los días que bebió, ¿aproximadamente cuantos tragos tomo en promedio?
[Un trago equivale a una cerveza de 12 onzas (350 cl) a una copa de vino de 5 onzas (150 cl) o a una medida de licor]

Tomando en cuenta todos los tipos de bebidas alcohólicas, ¿Cuántas veces en los últimos 30 días bebió **5 o mas tragos** en una ocasión?

Tomando en cuenta todos los tipos de bebidas alcohólicas, ¿Cuántas veces en los últimos 30 días **bebió 4 o más tragos** en una ocasión?

BRFSS- HABITOS DE FUMAR

¿Ha fumado al menos 100 cigarrillos en TODA SU VIDA?
100 Cigarrilos = 5 paquetes
Si
No

ACTUALMENTE, ¿fuma cigarrillos todos los días, algunos días o no fuma para nada?
Todos los días
Algunos días
Para nada

¿En los últimos **30 días,** cuantas veces ha usado un cigarrillo electrónico o otro producto electrónico para vapear?

RECURSOS SOBRE RELACIONES SOCIALES

Las siguientes preguntas son sobre cómo te sientes acerca de diferentes aspectos de ti, ¿con qué frecuencia te sientes así?

¿Con qué frecuencia siente que le falta compañía?
- Casi nunca
- A veces
- Con frequencia

¿Con que frecuencia se siente excluido?
- Casi nunca
- A veces
- Con frequencia

¿Con qué frecuencia se siente aislado de las demás?
- Casi nunca
- A veces
- Con frequencia

¿Con que frecuencia siente que se siente solo?
- Siempre
- Usualmente
- Algunas veces
- Nunca

BERKMAN INDICE DE REDES SOCIALES

¿En una semana típica, cuantas veces habla por teléfono con familia, amigos, o vecinos?

¿En una semana típica, cuántas veces tiene conversaciones (no necesariamente por teléfono; podría ser por video o texto) con familiares, amigos o vecinos?

¿Con qué frecuencia se reúne con amigos o familiares? (por semana)

¿Cuantas veces va a la iglesia o servicios religiosos? (por año)

¿Cuantas veces atiende juntas de clubs o organizaciones a las cual pertenece? (por año)

ENRICHD INDICE DE APOYO SOCIAL

¿Hay alguien disponible con la que usted puede contar en escucharlo cuando necesita hablar?
- Ninguna de las veces
- Un poco de tiempo
- Algo de tiempo
- La mayoría de tiempo Todo el tiempo

¿Hay alguien disponible que le pueda dar buenos consejos sobre un problema?
- Ninguna de las veces
- Un poco de tiempo
- Algo de tiempo
- La mayoría de tiempo
- Todo el tiempo

¿Hay alguien disponible que le pueda enseñar amor y afección?
- Ninguna de las veces
- Un poco de tiempo
- Algo de tiempo
- La mayoría de tiempo
- Todo el tiempo

¿Hay alguien disponible que le pueda ayudar con quehaceres diarios?
- Ninguna de las veces
- Un poco de tiempo
- Algo de tiempo
- La mayoria de tiempo
- Todo el tiempo

¿Puede contar con alguien que le brinde apoyo emocional? (Hablar sobre problemas o ayudándole hacer una decisión difícil)?
- Ninguna de las veces
- Un poco de tiempo
- Algo de tiempo
- La mayoría de tiempo
- Todo el tiempo

¿Tiene el contacto que le gustaría con alguien con quien se siente cercano, alguien en quien puede confiar?

Ninguna de las veces
Un poco de tiempo
Algo de tiempo
La mayoría de tiempo
Todo el tiempo

PREGUNTAS SOCIODEMOGRAFICAS EXTRAS

¿Está tomando algún medicamento para la ansiedad, la depresión o el estrés?

Si
No

Aproximadamente, ¿cuando fue la ultima vez que fue al medico para hacerce un chequeo de rutina?

En el último año (hace menos de 12 meses)
En los últimos 2 años (hace más de 1 año, pero menos de 2)
En los últimos 3 años (hace más de 2 año, pero menos de 3)
En los últimos 5 años (hace más de 3 años, pero menos de 5)
En los últimos 10 años (hace más de 5 años, pero menos de 10)
Hace 10 años o mas

Durante los últimos 12 meses, ¿hubo algún momento en que necesitó atención médica pero no la obtuvo porque no podía pagarla?

Si
No

Durante los últimos 12 meses, ¿ha retrasado la atención médica debido a la preocupación de el costo?

Si
No

¿Hubo algún momento en que RETRASO obtener atención médica debido a la pandemia de coronavirus?

Si
No

Durante los últimos 12 meses, ¿recibió asesoramiento o terapia de un profesional de la salud mental, como un psiquiatra, un psicólogo, una enfermera psiquiátrica o un trabajador social clínico?

Si

No

¿Está cubierto por algún tipo de seguro médico o algún otro tipo de plan de atención médica?

Si

No

¿Cuál es su código postal de cinco dígitos?

APPENDIX C

Hello _,

CULINARY UNION:
Scroll down to read this message in Spanish.
Vaya hacia abajo para leer este mensaje en Español.

You are invited to participate in an academic research survey sponsored by researchers at Northern Arizona University (NAU) in partnership with the Culinary Workers Union Local 226.

The study is: “Understanding social and emotional well-being in the hospitality industry during COVID-19.”

The survey takes around 10 minutes to complete, and it is available in English and Spanish. Researchers seek to understand the relationship between changes in employment status during the COVID-19 pandemic, emotional functioning, lifestyle behaviors, and social relationships.

The NAU academic researchers are generously providing a $2,000 donation to the Citizenship Project and The Culinary Academy of Las Vegas Community Food Assistance Program.

We urge you to participate in the survey: https://nau.co1.qualtrics.com/

Está invitado a participar en una encuesta de investigación académica patrocinada por investigadores de la Universidad del Norte de Arizona (NAU) en asociación con La Unión Culinaria Local 226.

El estudio es: " *Comprendiendo el bienestar social y emocional en la industria de la hospitalidad durante el COVID-19*".

La encuesta tarda alrededor de 10 minutos en completarse y está disponible en inglés y español. Los investigadores buscan comprender la relación entre los cambios en la situación laboral durante la pandemia de COVID-19, el funcionamiento emocional, los comportamientos de estilo de vida y las relaciones sociales.

Los investigadores académicos de la NAU están proporcionando generosamente una donación de $2,000 al Proyecto de Ciudadanía y El Programa de Asistencia Alimentaria Comunitaria de la Academia Culinaria de Las Vegas.

Favor de participar en la encuesta: https://nau.co1.qualtrics.com/jfe

APPENDIX D

Table 5
Employed-Related Variables and Status for Entire Sample

	% (*n*) or $\bar{x} \pm SD$
COVID-19 Work Continuity, % (*n)*	
Continuously employed	43.4% (480)
Working reduced hours	17% (188)
Laid off	14.2% (157)
Furloughed	12.7% (141)
Terminated	3% (33)
Other	9.6% (106)
Missing	0.1% (1)
Length of Work Interruption, $\bar{x} \pm SD$	12.4 ± 7.73
Work Variability, % (*n*)	
One continuous time period	61.2%% (357)
Alternating between working and not working	38.8% (226)
Looking for Work, % (*n*)	
Yes	26% (162)
No	74% (460)
Reason for not Returning to Work, % (*n*)	
I have returned to work	85.1% (468)
COVID-19 health concerns	2.2% (12)
I cannot find a job	6.0% (33)
Still on layoff and haven't been recalled to work	6.7% (37)

Note: This table shows descriptive data for employment variables created by the researchers related to COVID-19. The first question was posed to all participants. Skip logic from the first question was used for the subsequent four questions; participants who endorsed being continuously employed did not receive these questions.

In regard to work continuity during COVID-19, 60.4% of the analytic sample indicated they had been employed continuously or worked reduced hours, 12.7% were furloughed, 17.2% were laid off or terminated, and 9.6% chose "other." Of the participants who had a change in employment status based on this first question, the average length of work interruption was 12.4 months with 57.1% reporting one single continuous period out of work and 36.2% reporting alternating periods of work and non-work. Around one-quarter (25.9%) of these participants indicated they were currently looking for work. Finally, 74.9% of participants indicated that they had returned to work. Data from these variables should be viewed with caution, as these questions were created for the current study and were not validated.