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## EDITOR'S FORUM

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### EMPLOYMENT STATUS, ETHNICITY, AND ALCOHOL USE IN GUAM

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**This research note reports the results of tests designed to assess the relative effects of employment status versus ethnicity on alcohol use in Guam's Asian-Pacific community. Guam's cultural diversity has grown sharply since 1986; one result of recent increases in migrants to Guam is the stereotypical view that all Micronesians abuse alcohol. In this brief study I argue that employment status is more important than ethnicity for understanding alcohol use in Guam. Drawing from an extensive literature describing the effects of social integration on health risk behaviors, I hypothesize that unemployed persons will consume significantly more alcohol than employed persons, and that being unemployed will account for ethnic differences in alcohol use. The results of regression analyses of Behavioral Risk Factor Survey data support these hypotheses. Whereas being Micronesian, male, and having a low income predict greater alcohol use, unemployment accounts for the significantly greater use of alcohol reported by Micronesian respondents. The implications of these findings for theory and future research are also discussed.**

**THIS RESEARCH NOTE** explores the relative effects of employment status versus ethnicity as factors affecting alcohol use in Guam. Alcohol use in Guam and Micronesia is pervasive (Marshall 1993, 1991; Pinhey, Workman, and Borja 1992), associated with mental health problems (Hezel and Wylie 1992), various forms of physical violence (Hoff 1992; Marshall 1979; Nero

1990), suicide (Rubinstein 1992), and with injuries resulting from automobile accidents. Alcohol use is also a leading risk factor for a number of physical health problems, including cirrhosis of the liver, which is among the leading causes of death in Guam (Vital Statistics 1991). Alcohol use is primarily a male activity (Catalano et al. 1993; Marshall 1987, 1979; Nero 1990). In U.S. mainland populations, higher incomes are associated with the *use* of beverage alcohol, whereas lower incomes correlate strongly with *severe* alcohol problems (see Greenburg and Grunberg 1995 for a review). The literature also supports the argument that social ties--employment, marriage, parenthood--reduce significantly the use of alcohol and other pharmacological substances (see Pinhey, Workman, and Borja 1992; Umberson 1987 for reviews). The loss of these ties--job loss, divorce, children leaving home--may increase alcohol and substance abuse (see Catalano et al. 1993; Horwitz and Davies 1994 for reviews).

In the present analysis I assess the effects of employment status and ethnicity on alcohol use for Guam's Asian-Pacific population. The 1986 implementation of a Compact of Free Association between the United States and the newly formed Federated States of Micronesia and the Republic of the Marshall Islands led to a "flood" of Micronesian migrants to Guam (Rubinstein and Levin 1992). This influx of immigrants has been met with a degree of negative ethnic stereotyping. One such stereotypical view is that all Micronesians abuse alcohol. I argue that alcohol abuse in Guam is more strongly related to unemployment than to Micronesian ethnicity.

### **Theory**

A firmly established sociological literature describes the effects of social ties on health behaviors, reaching back to Emile Durkheim's seminal study of social integration and suicide ([1897] 1951). Drawing on this literature, I hypothesize that social ties resulting from employment reduce alcohol use, whereas the loss of these social ties through unemployment results in greater alcohol consumption (Catalano et al. 1993; Catalano 1991; Crawford et al. 1987; Layne and Lowe 1979). This hypothesis reflects Durkheim's classic view of social integration wherein the existence of relationships is seen as affecting an individual's social environment. As Umberson argues (1987: 309), social ties involve elements of obligation and constraint and provide a sense of meaning and purpose for individuals' lives (Gove 1973). In this way employment relationships affect mental well-being and health behaviors by shaping a person's social environment and lifestyle (House, Landis, and Umberson 1988).

A basic premise of this explanation is that the social integrative effects of

employment diminish an individual's inclination to engage in behaviors that may adversely affect his or her health, and that the sense of meaning and the obligations that arise from employment inhibit behaviors that risk health and promote those that are positive.<sup>1</sup> From this perspective, excessive drinking on the job may be defined as deviant by employers and fellow employees, and is thus sanctioned (Parsons 1951). Sanctions may result either in an end to excessive drinking on the job or to unemployment. The alternate hypothesis is that drinking on the job is an accepted or normal behavior that does not result in sanctions (Ames 1996), thus suggesting that levels of alcohol consumption are not related to employment status. I test this hypothesis using a probability sample of Guam's Asian-Pacific population and anticipate that unemployment is related significantly to greater alcohol use, whereas employment is related to significantly lower levels of consumption. Drawing from previous research (Catalano et al. 1993; Marshall 1987; Nero 1990; Umberson 1987), I also predict that men will report using significantly more alcohol than will women, and that greater alcohol abuse is related to lower income levels. Based on popular descriptions (Kluge 1991), previous research (Marshall 1993, 1991, 1987, 1979; Nero 1990), and local stereotypes, I anticipate that Micronesian respondents will report consuming more alcohol than respondents from other ethnic groups, and that their greater alcohol use will diminish to insignificance when the effect of unemployment is simultaneously considered. A review of the literature on substance use in Guam and Micronesia reveals no studies directly examining the relative influence of employment status and ethnicity for alcohol use.<sup>2</sup>

### Methods

The data for this study come from a Behavioral Risk Factor Survey (BRFS) conducted in Guam between the middle of March and the end of May 1991. The BRFS used a two-stage proportional cluster design to generate a random sample of Guam households. The sampling frame consisted of a list of the 35,277 households on the island. The relative proportion of households for each of Guam's nineteen villages to the total pool of households was calculated from the sampling frame, and a starting point within housing clusters was chosen at random. Interviews were completed with either the head of household or spouse, or with the eldest dependent (18 years of age or older). If all three were present, one was chosen at random for inclusion in the study. These methods yielded a total of 398 completed interviews, for a response rate of 80.4 percent.

The dependent variable for this study is alcohol use. This variable was measured using the following item: "A drink is 1 bottle of beer, 1 glass of

wine, 1 can or bottle of wine cooler, 1 cocktail, or 1 shot of liquor. On the days when you drank (this month) about how many drinks did you drink on average?" A total of 132 respondents (33.2 percent) reported using alcohol. The mean for alcohol use is 4.3 drinks per episode with a standard deviation of 4.4 drinks.

To evaluate the independent effects of employment status on alcohol use, I constructed three binary variables: (1) currently working (working = 1, others = 0); (2) currently unemployed (unemployed = 1, others = 0); and (3) not in the labor force (not in the labor force = 1, others = 0). Using ordinary least squares (OLS) multiple regression analysis, the models also assess the effects of self-reported ethnicity on alcohol use. Final binary ethnic categories include Chamorro, Filipino, Asian (Chinese, Japanese, and Korean), Micronesian (Chuukese, Yapese, Kosraean, Pohnpeian, and Palauan), and Caucasian respondents (the excluded comparison category in the OLS regression models that follow).<sup>3</sup> The OLS regression models control for age (actual years), sex (males = 1, females = 0), marital status (married = 1, others = 0), parenthood (parent = 1, others = 0), total family income (a seven-point ordinal scale ranging from less than US\$10,000 to \$50,000 and greater), and education (an ordinal eight-point scale ranging from eight grade or less to postgraduate degree). Although not shown here, I calculated zero-order correlations among all the independent variables described above. None correlated above .37; I therefore concluded that multicollinearity is unlikely to be problematic in the multivariate models that follow.

I estimate the effects of employment status on alcohol consumption using three equations. The first equation (1) contains the binary measure for being employed, the second equation (2) for being unemployed, and the third equation (3) for those respondents who are not in the labor force (that is, homemaker, retired, in school). As discussed above, I anticipate that respondents who are employed will consume significantly less alcohol, and that unemployed respondents and males with lower incomes will report using significantly more alcohol. I also anticipate that being unemployed is relatively more important than is being Micronesian for predicting alcohol use in Guam.

## Results

Descriptive results indicate that Micronesian respondents have higher mean drinking scores (8.7) per drinking occasion than Chamorro (4.9), Caucasian (3.5), Filipino (2.8), and Asian (2.3) respondents. As may be seen in Table 1, however, employed respondents report consuming significantly less alcohol than others, while greater alcohol use is related significantly with being Micro-

**TABLE 1. Unstandardized OLS Regression Coefficients for Alcohol Use with Employment Status and Control Variables ( $n = 132$ )**

| Variable           | (1) Employed |           | (2) Unemployed |           | (3) Not in Labor Force |           |
|--------------------|--------------|-----------|----------------|-----------|------------------------|-----------|
|                    | <i>B</i>     | <i>SE</i> | <i>B</i>       | <i>SE</i> | <i>B</i>               | <i>SE</i> |
| Chamorro           | 0.813        | 1.275     | 0.570          | 1.242     | 0.897                  | 1.292     |
| Filipino           | -1.017       | 1.385     | -1.119         | 1.345     | -1.112                 | 1.405     |
| Asian              | -0.959       | 1.602     | -1.089         | 1.555     | -1.080                 | 1.625     |
| Micronesian        | 4.350**      | 2.092     | 3.050          | 2.046     | 4.066*                 | 2.149     |
| Age                | -0.028       | 0.032     | -0.009         | 0.030     | -0.018                 | 0.033     |
| Male               | 3.408****    | 0.784     | 3.007****      | 0.753     | 3.200****              | 0.804     |
| Married            | 0.214        | 0.902     | 0.109          | 0.876     | 0.144                  | 0.915     |
| Parent             | 1.070        | 0.749     | 1.022          | 0.721     | 0.879                  | 0.757     |
| Income             | -0.322       | 0.209     | -0.456**       | 0.199     | -0.395*                | 0.215     |
| Education          | 0.135        | 0.190     | 0.103          | 0.180     | 0.058                  | 0.192     |
| Works              | -1.673*      | 0.905     |                |           |                        |           |
| Unemployed         |              |           | 5.343***       | 1.628     |                        |           |
| Not in labor force |              |           |                |           | 0.142                  | 1.021     |
| Constant           | 4.039        |           | 3.100          |           | 3.289                  |           |
| $R^2$              | .256         |           | .298           |           | .235                   |           |
| Adjusted $R^2$     | .188         |           | .234           |           | .165                   |           |

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ , \*\*\*\*  $p < .001$  (two-tailed)

nesian and being male (equations 1 and 3). Unemployed respondents report using significantly more alcohol, are significantly more likely to be male, and report lower income levels (equation 2). As predicted, being unemployed accounts for the statistically significantly greater alcohol use reported by Micronesian respondents (equation 2). Nonparticipation in the labor force is not related to greater alcohol use (equation 3).<sup>4</sup>

I considered next the possibility that greater alcohol use was related to higher levels of frustration, unhappiness, or distress resulting from unemployment.<sup>5</sup> In separate analyses (not shown here), I estimated the effects of unemployment on psychological distress, personal happiness, and frustration (see Turner 1995 for a review). Unemployment was not related significantly to these variables. Further explorations revealed that these variables were not related significantly to reports of greater alcohol use either.

### Discussion and Conclusions

The recession of the early 1990s has renewed scholarly interest in the behavioral effects of job loss (e.g., Catalano et al. 1993; Catalano 1991). Among

these effects are the suspected connection between unemployment and alcohol use. Drawing from an extensive literature describing the effects of social integration on health behaviors, the present study explored the relationship between employment status, ethnicity, and alcohol use in Guam. I hypothesized that employed persons would consume significantly less alcohol, and that unemployed persons and males with lower incomes would consume significantly more alcohol. I also predicted that being unemployed is more important than being Micronesian for understanding alcohol use in Guam. The results of my tests support these predictions and the conjecture that relationships and obligations resulting from the social integration of employment reduce alcohol use, whereas the loss of social ties because of unemployment is associated significantly with greater alcohol use. Another way of gaining insight into the importance of employment status for understanding alcohol use is to reconsider the meaning of the unstandardized regression coefficients presented in Table 1. Employment reduces alcohol use by almost two drinks per episode ( $B = -1.673$ ), while unemployment increases alcohol use by roughly five drinks per episode ( $B = 5.343$ ). Since acute drinking is defined as being five or more drinks per drinking occasion, unemployment can be seen as contributing significantly to alcohol abuse. Thus, another particularly important finding is that unemployment accounts for the significantly greater alcohol use reported by Micronesian respondents, indicating that unemployment rather than being Micronesian may be of greater importance for predicting increases in alcohol consumption for Guam's multiethnic population.

What are the implications of these findings for theory and future research? First, the results of the present study clearly indicate that unemployment contributes significantly to greater risk for alcohol abuse, particularly among males with lower incomes. Second, since alcohol abuse is associated with spousal abuse (Hoff 1992; Nero 1990), it is possible that unemployment due to a contracting economy results in greater alcohol consumption, resulting in increased levels of domestic violence. The linkages between economic conditions, substance abuse, and domestic violence have yet to be fully explored for Guam or Micronesia. Future researchers may wish to examine these relationships.<sup>6</sup> Third, because unemployment accounts for Micronesians' significantly greater use of alcohol, it is possible that job training, placement programs, and a robust economy may reduce levels of alcohol abuse in Guam.

Finally, the potential limitations of this brief study deserve mention as they relate to interpretations of the results. Specifically, a principal weakness of cross-sectional analyses comparing alcohol use among the unemployed with others is the problem of "reverse causation"--the possibility that prob-

lem drinking causes unemployment rather than vice versa (see Catalano et al. 1993:215). Time-series or panel studies provide a solution to this methodological difficulty. As well, the sample for the present study is relatively small and a larger sample may have produced stronger or different patterns. These potential limitations aside, the results of the analysis reveal strong and significant associations between employment status and alcohol use that are consistent with predictions derived from the social integration hypothesis, thus contributing to our knowledge of alcohol use in Guam. Systematic time-series studies linking economic conditions with substance abuse and violent behavior are clearly indicated, as are educational and intervention programs for the unemployed.

### NOTES

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1. As one anonymous referee was quick to point out, examples of obligations resulting from the social integrative effects of employment that would reduce drinking behavior among working Micronesians include having to get up early to begin work and being afraid of being dismissed for absenteeism or for poor performance resulting from a bad hangover.

2. Details concerning Guam's social context and history are easily accessible elsewhere (Pinhey and Ellison 1997; Rogers 1995), and are not discussed in this research note to conserve space.

3. The relatively small size of the BRFSS sample necessitates collapsing Asian and Micronesian respondents into the two larger "Asian" and "Micronesian" ethnic categories. Although it is likely that alcohol use varies among the ethnic groups that comprise these categories (see Zane and Kim 1994), the stereotype that *all* Micronesians abuse alcohol is actually better tested using this classification. Nevertheless, following Rubinstein and Levin (1992:350), I note that to speak of migrants from the Federated States of Micronesia as a single ethnic category is misleading. Micronesian migrants to Guam speak as many as fifteen different languages; each separate ethnic group shares ties to a home island and tends to maintain cultural distinctiveness through the maintenance of language and endogamy, all of which are probably reinforced by the continuing influx of new migrants from home communities.

4. I also recalculated the OLS regressions using various measures of employment status as the excluded comparison category while including two employment categories in the OLS regression equations. The results of these reanalyses indicate that for every combination of employment status, being unemployed is associated significantly with greater alcohol consumption, and that the significantly greater alcohol use associated with being Micronesian is reduced to insignificance when unemployment is considered simultaneously with the other control variables.

5. In Palau, drinking is an accepted outlet for frustration (Nero 1990:86), which may result from job loss and unemployment. Whereas economic change in Palau may result in stress, frustration, and greater alcohol consumption (ibid.:80), the link between unemployment and these variables for Guam's population is unclear.

6. For time-series association studies between macroeconomic indicators and variables related to alcohol use see Brenner 1975, 1977; Catalano, Dooley, and Jackson 1983; and Thomas and Kramer 1978. Brenner's early study found that increases in the national unemployment rate were associated with subsequent increases in sales of alcohol, admissions to mental health facilities for alcohol disorders, deaths resulting from cirrhosis of the liver, and arrests for alcohol-related offenses.

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