SOLITARY DRINKING, SOCIAL ISOLATION, AND ESCAPE DRINKING MOTIVES AS PREDICTORS OF HIGH QUANTITY DRINKING, AMONG ANGLO, AFRICAN AMERICAN AND MEXICAN AMERICAN MALES

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Abstract — This paper addresses the phenomenon of 'solitary drinking', considering whether Anglo, African American and Mexican American male regular drinkers differ in the propensity to drink in solitary contexts and whether such differences may help to explain observed ethnic variation in patterns of heavy drinking. Further, the paper considers whether apparent relationships between solitary drinking and drinking patterns are explained by individual personality characteristics such as social isolation and/or by endorsement of 'escape drinking' motives. Data were analysed from a random community sample of 481 adult male regular drinkers in San Antonio, Texas, USA. Contingency table and logistic regression analyses indicated that initially observed ethnic differences in high quantity and high maximum drinking were largely eliminated by controls for education, escape motives and solitary drinking. Ethnic variation in the role of solitary drinking was suggested as well, with solitary drinking more strongly related to high quantity consumption, in particular, among African Americans than among Mexican Americans. The nature of the observed interactions suggests that fundamental differences between Anglos and African Americans in the roles of solitary drinking and escape drinking motives may underlie seemingly similar frequent, lower quantity drinking patterns in these groups that appear more frequently than among Mexican American males.

INTRODUCTION

This paper addresses the phenomenon of 'solitary drinking' and heavy drinking in differing racial/ethnic (hereafter referred to as a 'ethnic' for brevity) groups, considering whether Anglo, African American, and Mexican American males differ in the propensity to drink in solitary contexts and whether such differences may help to explain ethnic variation in patterns of heavy drinking (cf. Neff, 1986, 1991). Beyond this, however, the issue is whether apparent relationships between solitary drinking and drinking patterns can be explained by individual personality characteristics such as social isolation and/or by endorsement of 'escape drinking' motives. The goal is to clarify the independent and joint influences of personality dimensions, drinking motives, and drinking contexts with regard to heavy drinking in different ethnic groups, focusing specifically upon adult male drinkers, as evidence of a higher prevalence of patterns of infrequent heavy drinking among Hispanics than Anglos and African Americans has generally been most pronounced among males (Caetano, 1987; Neff, 1991).

Underlying much of the literature regarding socio-cultural factors and alcohol use is the distinction between socially integrative versus alienating functions of drinking (Bales, 1946). This distinction can be drawn at the level of drinking motives (i.e. drinking to enhance sociability versus drinking to 'escape'; Mulford and Miller, 1960) as well as drinking contexts (e.g. drinking with others versus solitary drinking; Cutter and O'Farrell, 1984). Drinking motives and contexts are related, as solitary drinking has been found to be associated with escape motives such as drinking to forget problems and disappointments (Cutter and O'Farrell, 1984). Also, Cahalan et al. (1969) found that heavy drinking 'escape drinkers' were more likely, compared to non-escape drinkers, to drink in solitary contexts, and to report drinking to allay anxiety or nervousness.
Intuitively, solitary drinking and escape drinking motives appear related, and, historically, solitary drinking has been viewed as a manifestation of social isolation associated with problem drinking and alcoholism (i.e. 'phases of addiction', cf. Jellinke, 1952). However, solitary drinking need not necessarily be associated with negative outcomes. First, pre-existing personality orientations (e.g. social isolation) may contribute to individual propensities toward solitary vs social drinking contexts (Jackson, 1954) and thus, personality, rather than drinking contexts, may be responsible for drinking problems. Second, while solitary drinking, escape motives, social isolation, and heavy drinking tend to be associated (cf. Cahalan et al., 1969), there is little consensus that solitary drinking, per se, represents a core defining element of 'problem drinking' or alcoholism (Cahalan and Room, 1974). Thus, while acknowledging that problem drinking can arise in either solitary or social drinking contexts, it is still of conceptual and substantive interest to empirically clarify the relationships between solitary drinking, social isolation and escape drinking motives, and to assess which of these predictors are most strongly related to drinking patterns when all variables are controlled.

Basically, two conceptual and empirical issues are addressed. First, is solitary drinking related to patterns of heavy drinking? If so, then the question is one of determining how this relationship is to be explained. That is, are apparent effects of solitary drinking and escape motives due to the tendency for more socially isolated individuals to adopt escape motives and solitary drinking patterns? Second, beyond considering independent relationships with drinking patterns, the possibility of interactions between predictors is important to consider as well. Thus, it may be that social isolation is related to heavy drinking patterns only among those who endorse escape drinking motives.

Beyond the general focus upon examining relationships between solitary drinking, escape drinking motives, and social isolation, the present paper seeks to examine the contribution of these variables to observed ethnic differences in drinking patterns. Specifically, recent research has shown rather consistently that Anglos and African Americans tend to drink somewhat more frequently than Hispanics, while Hispanics drink significantly higher quantities of alcohol on occasions when they drink (Neff, 1991), similar to patterns among males in Mexico (cf. Roizen, 1981). These quantity and frequency trends reflect distinctive drinking patterns, as no differences exist between groups in terms of overall amount of alcohol consumed (Neff et al., 1987; Neff, 1991). The fact that these drinking pattern differentials are not readily accounted for by socio-economic status (i.e. African American and Hispanic patterns differ despite similarly disadvantaged socio-economic positions) suggests the importance of examining possible cultural and/or contextual explanations.

Evidence of ethnic variation in drinking motives is found in high rates of 'escape' or 'personal effects' among African Americans and Hispanics, relative to the general population (Cahalan et al., 1969; Caetano, 1984). Neff (1991) also found that African American and Mexican American males had more positive expectancies (i.e. greater acceptance of drinking and drunkenness) than did Anglos. Ethnic differences in drinking contexts have also been observed in national data, with Anglo males drinking more frequently in restaurants, clubs, and bars. While African American males tended to drink more frequently than Anglos or Hispanics in parks, streets, and parking lots, Hispanics tended to drink more heavily in these outdoor settings (Caetano and Herd, 1988). Although Herd (1985) suggested that cultural norms among African Americans emphasizing restraints upon drinking behaviour in public settings might result in patterns of heavier consumption in private settings in this group, the data presented by Caetano and Herd (1988) did not support this hypothesis. It is possible, however, that the wording of their solitary drinking measure (i.e. 'Spending a quiet evening at home') may not have the same meaning in differing cultural groups.

The objectives of the present paper are to clarify the role of solitary drinking among Anglos, African Americans and Mexican Americans as well as to evaluate the role of solitary drinking as it relates to drinking patterns in general. As there is at least some suggestion that both patterns of heavy drinking and the role or function of alcohol use may vary by ethnicity, the present paper presents data from San Antonio, Texas dealing with contexts, motives, and social isolation as they
relate to patterns of high quantity consumption among Anglo, African American and Mexican American male regular drinkers. In this regard, it is important to note that the community-based studies which have examined the role of solitary drinking (e.g. Cahalan and Room, 1974) have not explicitly examined the possibility of ethnic differences.

METHODS

Sampling procedures

Standardized household interviews were conducted with a total of 481 male regular drinkers (i.e. those drinking at least 2–3 times per month), aged 20–50, residing in the community. Multi-stage area probability sampling techniques were used, stratifying census tracts in urban San Antonio by median household income and by percent African American/Spanish origin. These two stratification factors were imposed to reflect SES variation within and between ethnic groups as well as to reflect the ethnic heterogeneity of census tracts. Within strata, tracts and blocks were randomly drawn for study and a systematic random sample of residences was drawn within each. Interviews were allocated to tracks and blocks proportional to the population of the respective racial/ethnic groups. One eligible regular drinking male was randomly selected per household (Kish, 1965). The refusal rate for the study was ~13% of potentially eligible respondents (8% of total contacts). Refusal rates ranged from 1% in low-income minority tracts to 25% in higher income Anglo tracts. The resulting sample consisted of 164 Anglos, 168 African Americans and 149 Mexican Americans. As the focus of analysis is upon ethnic comparisons, rather than pooling findings to generate overall estimates of population parameters, the present analyses were conducted on unweighted sample data.

Demographically, African Americans and Mexican Americans in our sample had lower average annual incomes than Anglos ($16,000 and $18,000 vs $22,500, respectively, $P < 0.05$). Minority males also had fewer average years of education (13.04 and 11.51 vs 14.29, respectively, $P < 0.01$) and were more likely to be unemployed than Anglos (17.0% and 14.1% vs 7.9%, respectively, $P < 0.01$). African Americans were less likely to be currently married (44.0%) than were Anglos (57.9%) and Mexican Americans (73.2%) ($P < 0.05$). There were no age differences between groups.

Measurement of drinking patterns

Several dimensions relevant to quantity, frequency and variability of alcohol consumption were measured in the interview. As respondents overwhelmingly had a ‘preferred beverage’ — typically beer — it was decided that the best picture of the respondent’s typical drinking pattern would likely be reflected by consumption of this most frequently consumed beverage.

The following two drinking pattern measures are examined here to reflect patterns of infrequent, heavy drinking:

1. Quantity of preferred beverage: number of drinks/typical drinking occasion. This measure is of interest as previous research has found that Hispanics drink a significantly higher quantity of alcohol than Anglos or African Americans (Neff, 1991). For analysis, this variable was dichotomized into: <3 drinks/day (32%) vs 3+ drinks/day (68%).

2. High maximum drinking of preferred beverage: a dichotomous variable indicating consumption of at least 5–6 drinks on at least one-half of drinking occasions (35% of respondents). The 5–6 drink cut-off was selected to be consistent with other studies (Cahalan et al., 1969; Caetano, 1988), and because it corresponds roughly to consumption of at least a 6-pack of beer, a common practice among heavier drinkers in our sample (11% of Anglos, 8% of African Americans and 31% of Mexican Americans).

The rationale for the selection of these measures and cut-off points is to contrast a range of infrequent, heavy drinking. While both measures address quantity, the quantity measure deals with typical drinking occasions and the cut-off of 3 or more drinks reflects a consumption level that might typically be regarded as ‘moderate’ for males. The high maximum measure, however, reflects a higher drinking threshold, both in terms of 5–6 drinks per occasion, but also in terms of a relatively consistent pattern of drinking at least 5–6 drinks on one-half or more of drinking occasions. A sense of the construct validity of these cut-offs is provided by examination of the mean quantity, frequency, and quantity-frequency (i.e. mean total drinks/week) that correspond to
Table 1. Alcohol consumption by social isolation, solitary drinking and escape drinking motives

<table>
<thead>
<tr>
<th>Motives:</th>
<th>Social isolation</th>
<th>Solitary drinking</th>
<th>Escape</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (n = 304)</td>
<td>High (n = 172)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low (n = 377)</td>
<td>Yes (n = 100)</td>
<td></td>
</tr>
<tr>
<td>Quantity</td>
<td>64.8%</td>
<td>62.6%</td>
<td>60.9%</td>
</tr>
<tr>
<td>High maximum</td>
<td>73.3%</td>
<td>87.0%</td>
<td>72.9%</td>
</tr>
<tr>
<td></td>
<td>3.22</td>
<td>20.42*</td>
<td>6.95*</td>
</tr>
<tr>
<td></td>
<td>31.7%</td>
<td>31.8%</td>
<td>27.8%</td>
</tr>
<tr>
<td></td>
<td>42.0%</td>
<td>49.0%</td>
<td>40.9%</td>
</tr>
<tr>
<td></td>
<td>4.66*</td>
<td>9.56*</td>
<td>7.92*</td>
</tr>
</tbody>
</table>

*P < 0.05.

Numbers in parentheses represent approximate base against which percentages are calculated. Actual numbers may vary due to missing data.

drinkers in the high consumption categories of each of these measures. High quantity drinkers had a mean of 6.1 drinks per occasion, 3.4 drinking days per week, and a weekly total of 21 drinks. High maximum drinkers had a mean of 7.7 drinks per occasion, 3.7 drinking days per week, and a weekly total of 28 drinks.

**Personality, drinking motive, and drinking context measures**

Social isolation was assessed using six items drawn from Dean (1961) which dealt with individual perceptions of social isolation. Internal consistency reliability (Cronbach's alpha) for this measure was 0.48 for the total sample (0.59 for Anglos, 0.39 for African Americans, and 0.42 for Mexican Americans). This measure was split as close as possible to the median for analysis into low (64%) and high (36%) social isolation groups.

Escape drinking motives were assessed using eight items drawn from Mulford and Miller (1960), Cahalan et al. (1969) and Cutter and O'Farrell (1984) tapping escape drinking motives. These eight items tapped drinking to alleviate negative mood states (e.g. drinking to be less concerned about others' opinions, to forget problems) and had a Cronbach's alpha of 0.85 for the total sample (0.85, 0.83 and 0.87 for Anglos, African Americans and Mexican Americans, respectively). This measure was split as close as possible to the median into low ('non-escape': 69%) and high ('escape': 31%) escape drinking motive groups.

Solitary drinking was assessed using a combination of responses to two drinking context items. Respondents were classified as solitary drinkers if they responded 'very often' to both of the following items: 'How often do you drink at home?' and 'How often do you drink alone?'. Twenty one per cent of respondents were classified as solitary drinkers by this procedure.

**RESULTS**

**Preliminary analyses**

The only association between social isolation, escape drinking motives, and solitary drinking that reached significance involved social isolation and escape drinking, with more isolated individuals significantly more likely to endorse escape drinking motives (66.3%) than less isolated individuals (55.0%, $\chi^{2}_{df} = 5.30; P < 0.05$). Socially isolated individuals were slightly (39.0%) more likely to report solitary drinking than were less isolated individuals (35.5%) though not significantly so. Solitary drinkers were no more likely than non-solitary drinkers to endorse escape drinking motives (21.1% vs 20.1%).

Significant ethnic differences were found on key predictor and dependent variables. While a larger percentage of African Americans (38.9%) and Mexican Americans (36.2%) were classified as socially isolated than were Anglos (33.5%), these differences were not significant. Anglo males appeared most likely to endorse escape drinking motives (66.5%), compared to African Americans (49.7%) and Mexican Americans (61.5%) ($\chi^{2}_{df} = 9.98, P < 0.05$). African Americans were roughly twice as likely (30%) to report solitary drinking than were Anglos (13%) or Mexican Americans (19%) ($\chi^{2}_{df} = 16.05, P < 0.05$). It is interesting that ethnic differences in the endorsement of escape drinking motives did not parallel those for solitary drinking. Mexican Americans were most likely classified as high quantity (3+ drinks per occasion) drinkers.
Analyses were conducted using Statistical Analysis System (SAS Institute, 1988) software using maximum likelihood estimation procedures. Rather than using parametric techniques to analyse continuous drinking measures, logistic regression analyses using dichotomized variables were used because they allow: (1) ready interpretation of the magnitude of solitary drinking effects using odds ratios, (2) examination of the effects of predictors at differing levels of consumption (e.g. 2+ drinks vs 5+ drinks), rather than simply comparing average consumption scores between groups.

Of specific interest in evaluating the relationships between predictor variables are possible interaction effects. Multiple logistic regression techniques including all possible main and interaction effects of predictor variables were used in addition to stepwise logistic regression, using both forward and backward elimination techniques to identify the most parsimonious model fitting each dependent variable. All approaches yielded similar models. For drinking quantity, the simplest model yielding adequate fit to the data (Hosmer–Lemeshow goodness of fit $\chi^2_{df} = 7.52, P = 0.38$) included significant main effects of education ($\chi^2_{df} = 13.53, P = 0.002$), escape drinking ($\chi^2_{df} = 15.14, P = 0.001$), solitary drinking ($\chi^2_{df} = 11.06, P = 0.001$) and an interaction effect between ethnicity and solitary drinking (interaction term contrasting Anglos and Mexican Americans $\chi^2_{df} = 9.20, P = 0.003$; interaction term contrasting Anglos and African Americans $\chi^2_{df} = 6.74, P = 0.01$). The effects of social isolation and ethnicity were not significant in these analyses. For high maximum drinking, the simplest model (Hosmer–Lemeshow goodness of fit $\chi^2_{df} = 4.25, P = 0.83$) included only significant main effects of education ($\chi^2_{df} = 8.04, P = 0.005$), escape drinking ($\chi^2_{df} = 7.94, P = 0.005$) and solitary drinking ($\chi^2_{df} = 6.91, P = 0.009$). There were no significant main effects of social isolation or ethnicity or any interaction effects.

To facilitate the substantive interpretation of these models, we followed suggestions by Kaufman and Schervish (1986) to present findings in terms of predicted probabilities of high quantity and high maximum drinking, computed under the constraints of the model of interest. This approach yields a 'net distribution' in which probabilities have been adjusted to take into account those main
Fig. 1. Predicted probabilities of high quantity drinking by solitary drinking, escape drinking motives and ethnicity.

Fig. 2. Predicted probabilities of high maximum drinking by solitary drinking, escape motives and ethnicity.

and interaction effects implicated in the model. Maximum likelihood estimation procedures in the SAS PROC LOGISTIC programme were used to produce estimates. In computing these estimates, education was included in each model to provide a control for the possibility of confounding by socio-economic status. Estimates were generated at the sample mean of education. While the ethnicity by solitary drinking interaction reached significance only in the model predicting drinking
quantity, this interaction was included in generating predicted probabilities for both high quantity and high maximum drinking to facilitate comparisons of findings between dependent variables. Predicted probabilities, computed under the constraints of the model including the ethnicity by solitary drinking interaction and all significant main effects, are presented in Figs 1 and 2. To help characterize the magnitude of solitary drinking differences, odds ratios were calculated in each subgroup.

The interaction between ethnicity and solitary drinking for the high quantity measure is clearly depicted in Fig. 1, as solitary drinking effects were most pronounced among African American males (odds ratios of 2.17 and 1.47 for non-escape and escape drinkers, respectively). Over 90% of solitary drinking African American males, whether escape or non-escape drinkers, were classified as high quantity drinkers. In contrast, solitary drinking was unrelated to high quantity drinking among Mexican Americans (odds ratios of ~1.0 in both drinking motive groups). Among Anglos, solitary drinking effects were intermediate in magnitude (odds ratios of 1.46 and 1.22 for non-escape and escape drinkers, respectively).

Figure 2 presents the predicted probability of high maximum drinking (5–6 drinks per occasion on at least one-half of drinking occasions). High maximum drinking was generally less prevalent than high quantity drinking, reaching a maximum of 60% among Anglo and Mexican American solitary-escape drinkers. As with high quantity drinking, effects of escape motives and solitary drinking were additive. While the ethnicity by solitary drinking interaction effect did not reach statistical significance for high maximum drinking, the general patterns were similar to those for quantity, with the largest solitary drinking effects observed among African Americans (odds ratios of 1.89 and 1.70, respectively) and the smallest effects observed among Mexican Americans (odds ratios of 1.25 and 1.18, respectively).

DISCUSSION

The present analyses have sought to clarify the contributions of social isolation, drinking motives, and solitary drinking to ethnic differences in drinking patterns as well as to explore possible ethnic variation in relationships between these variables. A critical finding in the analyses was that the initially observed greater prevalences of high quantity and high maximum drinking among Mexican American than among Anglo or African American males were largely non-significant once controls were instituted for education, escape motives, and solitary drinking. This is important, as previous research has found that the tendency for Mexican American male drinkers to be infrequent, heavy drinkers is not explained by demographic or drinking motive differences between Mexican Americans, Anglos and African Americans (Neff et al., 1987; Neff, 1991; Neff and Hoppe, 1992).

Turning to the effects of psychosocial background variables, the multivariate analyses indicated that effects of solitary drinking contexts were generally independent of escape motives and social isolation. Indeed, social isolation did not emerge as a significant predictor of either high quantity or high maximum drinking in these analyses, once the effects of other variables were controlled. The lack of a consistent effect of social isolation in these analyses may reflect the low reliability of the social isolation measure (<0.60 in all groups).

Both escape drinking motives and drinking contexts emerged as significant predictors and their joint effects were additive, with the highest probabilities of high quantity and high maximum drinking found among solitary drinkers endorsing escape drinking motives. The lowest probabilities were found among non-solitary drinkers who did not endorse escape drinking motives. While the interaction effect between solitary drinking contexts and escape motives was not significant, it is interesting to note that odds ratios for solitary drinking effects were consistently higher among those not endorsing escape drinking motives. This may simply suggest that individuals endorsing escape drinking motives may be predisposed to higher consumption levels and that the nature of the drinking context may have less variance in drinking patterns to explain.

The analyses suggested possible ethnic variation in the roles of escape drinking motives and solitary drinking contexts among African American and Mexican American minority males. African American males reporting solitary drinking contexts were overwhelmingly likely to be classified as high quantity drinkers (>90%),
regardless of drinking motives. Solitary drinking was more strongly related to high quantity drinking patterns among African American male drinkers than in any other group. Among Mexican American males, solitary drinkers had a virtually identical probability of high quantity drinking as did non-solitary drinkers. For high maximum drinking, greater solitary drinking effects were found among African Americans, though solitary drinking differences did not vary significantly across ethnic groups. The consistency of the findings for high maximum drinking is reassuring.

The two questions raised by these findings are: (1) how can ethnic differences be explained?; (2) why were differences more pronounced at the lower consumption levels tapped by the high quantity measure? Part of the ethnic variation may be explained by possible normative differences in consumption levels between ethnic groups. Thus, it may be that if higher quantity drinking is the norm among Mexican American males, then the threshold of 3 drinks may not be sufficiently sensitive to discriminate among Mexican American drinkers. Indeed, the findings for high maximum drinking suggest that, when a threshold of 5 or more drinks is used, solitary drinking does discriminate in terms of level of consumption in this group.

More puzzling, however, is the salience of solitary drinking with regard to drinking among African Americans. Solitary drinking was quite prevalent in this group (30%) and one possible explanation may be that solitary drinking African Americans in San Antonio might well experience social isolation and may drink more heavily in solitary settings as a response to perceived isolation. Detailed analyses among African Americans in the sample, however, indicated no difference in the proportion of respondents classified as socially isolated between solitary and non-solitary drinkers among either non-escape (38% vs 34%) or escape (44% vs 40%) drinkers. Thus, there is little evidence to support a social isolation explanation among African Americans. Of course, reliability problems with the present measure of social isolation make this hypothesis difficult to evaluate.

An alternative explanation comes from Herd’s (1985) discussion of African American drinking norms, emphasizing social controls upon drinking in public settings, i.e. that African Americans may drink more heavily in solitary settings due to the lack of social controls. This hypothesis was not supported in the national data reported by Caetano and Herd (1988), though the effects of social context may well be magnified in the present sample where African Americans represent a small minority (7%) of the San Antonio population. This normative explanation works with regard to Mexican Americans in our sample as well, as our data suggest that higher quantity consumption may well be the norm among Mexican American male drinkers, independently of context. Unfortunately, norms regarding situational controls of drinking were not explicitly assessed in the data.

The present analyses admittedly have limitations in terms of measurement. The social isolation measure has low reliability and the 2-item-based solitary drinking measure is crude. Furthermore, the use of crude dichotomies for drinking outcome measures, while facilitating interpretation in some ways, likely implies some loss of information. However, granting these limitations, what is surprising in these analyses is how well escape motives and solitary drinking measures predict drinking pattern differences.

Overall, the present results suggest that drinking motives and drinking contexts both independently contribute to patterns of heavier alcohol consumption among male regular drinkers. Solitary drinking was more strongly related to high quantity consumption among African Americans than among Mexican Americans, and when solitary drinking, escape motives and the ethnicity by solitary drinking interaction were taken into account, Mexican Americans were no longer significantly more likely to be high quantity or high maximum drinkers than were Anglos. This interaction suggests the complexity of ethnic differences in drinking patterns. While Anglo and African male drinkers may both be more frequent, lower quantity drinkers in comparison to Mexican American males, fundamental differences between Anglos and African Americans in the roles of solitary drinking and escape drinking motives may exist. Further research examining contextual drinking norms may help to explain these issues.

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