

Socioeconomic Status and Alcohol Use Among Urban and Rural Residents in China

By: [Wu, B.](#), Mao, Z.F., Rockett, I., & Yue, Y.W.

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Abstract:

The association between socioeconomic status (SES) and current regular alcohol use was examined separately for urban and rural residents of Hubei, China, using the third Chinese National Health Service Survey conducted in 2003. A probability sample of 15,609 respondents, ages 15 through 101 years, was selected from the study base.

Alcohol use was a dichotomized variable (current regular users vs. others). Multivariate analyses incorporated four SES indicators: income, education, occupation, and house size. Investigation of status discrepancy indicated that income was positively associated with the likelihood of current regular alcohol use, whereas education was negatively associated. For both urban and rural residents, likelihood of current regular alcohol use was smallest for those in the highest education and lowest income category. Further research, which factors in quantity and frequency, is needed to understand how alcohol use among Chinese urban and rural populations impacts their health.

Keywords: socioeconomic status (SES); alcohol use; urban residents; rural residents; China

Article:

Introduction

Socioeconomic status (SES) is strongly related to health status, and has a discernible impact on almost all health outcomes (Adler and Ostrove, 1999; Lundberg, Johannesson, Isacson, and Borgquist, 1999; Mackenbach and Kunst, 1997). More recent research documents that the effect of SES on health status is mediated by health behaviors (Kim, Symons, and Popkin, 2004). However, associations between SES and health behaviors have rarely been examined (Hao et al., 2004; Laaksonen, Prattala, Helasoja, Uutela, and Lahelma, 2003; Lynch, Kaplan, and Salonen, 1997; Zhang, Wang, Lu, Qiu, Fang, 2004). SES is a multidimensional construct. Educational attainment, occupation, and income are the most commonly employed indicators of SES in studies of health behaviors (Laaksonen, Prattala, Helasoja, Uutela, and Lahelma, 2003). Although interrelated (Smith and Kington, 1997), these three indicators capture different aspects of SES (Liberatos, Link, and Kelsey, 1988; Laaksonen, Prattala, Helasoja, Uutela, and Lahelma, 2003; Neumark, Rahav, and Jaffe, 2003) and, in so doing, may follow different pathways in impacting those behaviors. Thus, there are limitations in examining health behaviors using only one or two SES indicators. A more comprehensive measure of SES is needed.

Alcohol use is a commonly defined health behavior (Laaksonen, Prattala, Helasoja, Uutela, and Lahelma, 2003). Until the early 1980s, alcohol-consumption-related diseases and problems were far less prevalent in China than in many Western countries (Lin and Lin, 1982; Shen, 1987). However, alcohol production and consumption have increased rapidly as a byproduct of a burgeoning economy. Accompanying increased alcohol use in China have been such problems as alcohol abuse, dependence, and related diseases (Cochrane, Chen, Conigrave, and Hao, 2003; Hao et al., 1995; Zhang, Wang, Lu, Qiu, and Fang, 2004). In 1982, the incidence of alcohol dependence and alcoholism in China was only 0.02%. By 1995, it had risen to 3.4% (Zhang, Wang, Lu, Qiu, and Fang, 2004).

Alcohol use is related to personal affordability. Economists estimate “*price elasticity of demand*” to measure consumer responsiveness to price change. Based on the price elasticity formula, a 5% price decrease in alcohol beverage leads to a 10% increase in demand (National Institute on Alcohol Abuse and Alcoholism, 2000). Research indicates that higher alcohol prices and taxes affect alcohol consumption (Her, Giesbrecht, Room, and Rehm, 1999), as well as such alcohol-consumption-related problems as the motor vehicular traffic fatality rate (Kenkel, 1993; Ruhm, 1996). Ruhm (1996) found that for every 1 % increase in the price of beer, the traffic fatality rate manifested a similar percentage decline. However, the price elasticity of demand may not particularly apply to “heavy drinkers” (Manning, Blumberg, and Andmoulton, 1995). The increase in personal disposable income in China is likely to accommodate their alcohol consumption.

The changing economic structure in China, from a planned to a market economy, has greatly promoted social and business interaction. Alcohol is commonly used, particularly by Chinese men, in business meetings and at social events to initiate business partnerships, maintain good relationships between supervisors and employees, and promote camaraderie among colleagues and friends (Hao, Derson, Xiao, Li, and Zhang, 1999). A concomitant of an improvement in economic status is the growing numbers of individuals who own automobiles. Increased alcohol-consumption-related traffic crash and injury rates, and other health problems as well, are a predictable consequence of the confluence of higher living standards, increased social interaction, and private automobile ownership. Reflected in the addition of alcohol questions to the Chinese National Health Service Survey, alcohol use now qualifies as a potential public health issue for health care professionals and society in China.

There was a paucity of research on alcohol use in China prior to the 1980s. Recent studies have focused on the clinical treatment and risk factors of alcohol consumption-related physical and mental disorders (Hao et al., 1995). However, few have examined correlates and determinants of alcohol use, and still fewer have investigated the impact of SES on use. Analyzing sample survey data in Wuhan, Zhang and associates (2004), found that higher economic status (indexed by personal income) was related to alcohol abuse.* A study of Chinese immigrants in England showed no statistically significant association between social class and alcohol consumption (White, Harland, Bhopal, Unwin, and Alberti,

*The journal’s style utilizes the category *substance abuse* as a diagnostic category. Substances are used or misused; living organisms are and can be abused. Editor’s note.

2001), where occupation indexed class. Kim, Symons, and Popkin (2004) included alcohol use as one of four indicators of lifestyle in a survey conducted in China. They found that respondents of higher SES, operationalized through income and education, manifested less healthy lifestyles than those of lower status. More specifically, compared with the lowest decile income group, those in the highest decile were 2.5 times less likely to have a healthier lifestyle. A similar trend was found with education. Compared with people with no formal education, those with more than 6 years of education (high education group) were 1.8 times less likely to maintain a healthier lifestyle.

Given that China is undergoing extremely rapid urbanization and socioeconomic change (Riley, 2004), there is an imperative to examine further the impact of SES on alcohol use. A prominent issue is the urban–rural divide. A widening health status gap in China is separating urban and rural residents based on variations in health care, pension policies, state provisions, and social experience (Liu, Hsiao, and Eggleston, 1999; Zimmer and Kwong, 2004). Drawing from a national survey, conducted in the mid-1980s, self-reported disability days per year for the Chinese urban population were 5.0 days. For the rural population it was 5.4 days. In 1993, disability days for the urban population decreased to 4.5 days, but increased to 6.8 days for rural populations (Liu, Hsiao, and Eggleston). In 2000, life expectancy at birth for the urban population was 75.2 years, which was almost 6 years higher than that for the rural population (China's Human Development Report, 2005). Life expectancy at birth for the urban population in 1990 was only 3.5 years higher than that for their rural counterparts (Liu, Hsiao, and Eggleston, 1999). Our study adopts a multidimensional approach in examining SES on current regular alcohol use within these two population groups.

Methods

Overview of the Survey

Every 5 years since 1993, the Center for Health Statistics and Information, at the Ministry of Health, has been administering a National Health Service Survey. The third National Health Service Survey was conducted between September 18 and October 20, 2003. Survey aims were twofold: (a) to collect relevant information on health services utilization and expenditure, and (b) to explore the relationship between health care needs and service utilization in order to guide health policy formulation. In addition to the information on health services, the survey also covered sociodemographic information, health status, acute and chronic conditions, health behaviors, and child delivery and vaccination. There are approximately 215 items in the questionnaire. Personal interviews were the mode of data collection in this national household survey. By means of a multistage clustered random sampling procedure, the survey tapped 57,000 households. Approximately 210,000 individuals were interviewed across all age groups. This survey is one of the few large-scale population-based national health surveys conducted in China. It covers many health areas related to the whole lifecycle. Thus, given its large scope, certain questions, such as on alcohol consumption, were necessarily limited.

†Parents served as a proxy for those infants and children that were selected.

Sampling

Data derive from the third National Health Service Survey, which covered urban and rural populations in Hubei province. According to the 2000 Chinese Census, there were

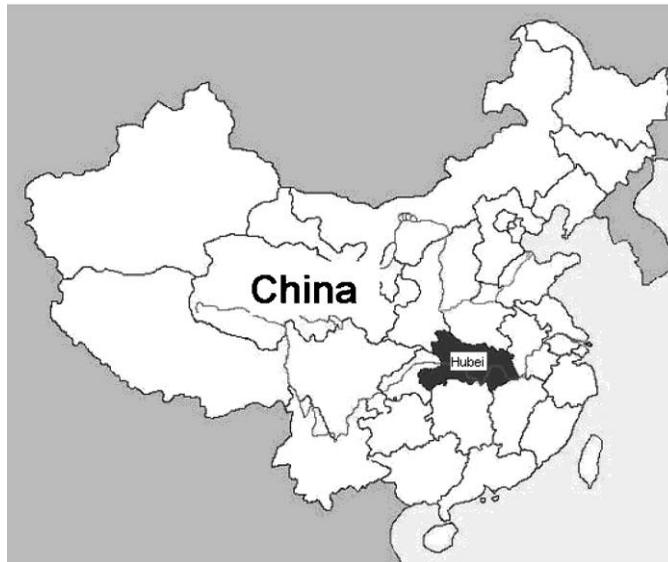


Figure 1. Map of Hubei.

59.5 million people living in Hubei, of whom 72% were rural. In epitomizing China, Hubei province is indeed very representative of Mainland Chinese (Figure 1).

Approximately 21,000 individuals in Hubei completed the survey. They represented 6,597 households. Staffs at local health clinics served as the interviewers. The survey response rate was 91%. Most nonparticipation concerned people whom the interviewers could not reach after three attempts. The survey permitted a proxy for individuals who were (a) unable to complete the questionnaire due to physical or mental illness or (b) unfamiliar with the questions being asked. No cases of refusal were reported. Such a high response rate is common for officially sponsored projects in China (Ikels, 1991; Yu et al., 1989; Zeng, Vaupel, Xiao, Zhang, and Liu, 2002). For purposes of our research project, a probability sample of 15,609 respondents, ages 15 through 101 years, was selected from the study base. This sample comprised 11,311 rural residents and 4,298 urban residents. As a special population, students were excluded from this study. The other exclusions were rural retirees, who numbered only 72.

Measures

Dependent Variable. Our dependent variable, current regular alcohol use, has a definition consistent with that used in the U.S. National Health Interview Survey and the National Health and Nutrition Examination Survey (National Center for Health Statistics, 2005).

†In China, semiliterate is defined as individuals who had no formal education or had less than a primary school education (i.e., had not completed primary school).

It can be used for international comparisons. Respondents were distinguished by whether they reported consuming at least 12 alcoholic drinks in the 12 months prior to survey. For economy, we label the groups as regular alcohol users and others.

Independent Variables. SES was indexed by a composite of educational attainment, household income, occupational status, and wealth. Educational attainment was categorized as illiterate/semiliterate, primary school completion, junior high school completion, and high school completion or more. For analytic purposes, this variable was treated as an ordinal measure. Annual household income represented total income received by all family members sharing the same household in the previous calendar year. Income included wages, salaries, bonuses, government payments, pensions, and financial assistance from relatives. Family members were all same house residents conjoined through blood, marriage, or adoption. Per capita household income was computed by dividing total household income by number of individuals in the same household. It was disaggregated into four quartiles (0%–25%, 26%–50%, 51%–75%, and 76%–100%) and treated as an ordinal variable in both the rural and the urban analyses.

Occupational status differentiated the unemployed, retirees, workers, and managers/administrators for urban residents, and the unemployed, farmers, workers, and managers for rural residents. A set of dichotomous variables was created for each occupational category and included the unemployed. For both population groups, managers and administrators encompassed government officials, private entrepreneurs, high- to middle-level administrators in large- to middle-size state-owned enterprises, and professionals. Urban workers included skilled and no-skilled workers, clerks, service workers, rural migrant workers, and self-employed manual workers. Rural workers comprised tailors, barbers, construction workers, and carpenters. The unemployed category merged individuals with no formal type of employment and persons performing housework with the unemployed. Farmers covered agricultural workers.

Wealth was operationalized by house size. Traditionally, house size has been a symbol of wealth in Chinese rural culture. It also is an important wealth indicator in urban settings. House size was created as an ordinal variable that distinguished quartiles (0%–25%, 26%–50%, 51%–75%, and 76%–100%).

Control Variables. Sociodemographic factors may simultaneously reference SES and lifestyles (Kim, Symons, and Popkin, 2004). For example, gender is strongly associated with educational level and alcohol use in China. Thus, it may confound the relationship between education and current regular alcohol use. Age, gender, and marital status were included as control variables in both the rural and urban analyses. Operationalized as an ordinal variable, age was categorized into five groups: 15–24, 25–39, 40–54, 55–69, and 70 years and older. For this study, marital status was a dichotomous variable: married versus nonmarried.

Data Analysis

With comparable specification, separate analyses of variable distributions and models were performed for rural and urban respondents. Variable frequency distributions were provided for both current regular alcohol users and their referent. Binary logistic regression models

were used to estimate the unadjusted effect of each SES indicator on regular use, as well as their independent effects adjusting for age, gender, and marital status.

Results

Descriptive Analysis

Rural Sample. Close to 15% of rural respondents were current regular alcohol users (Table 1). Regular users were older than their referent, others, and the great preponderance was male (90%). A higher percentage of regular users (91% vs. 81%) were married. They also reported higher income (chi square = 9.295, $p = .026$) and education (chi square = 16.62, $p = .01$). Variation across occupational status was modest, and there was no significant difference in house size between regular alcohol users and others (Table 1). Drinking histories for rural regular alcohol users broke down as follows: 10% had consumed alcohol within 0 to 9 years of survey; 23%, within 10 to 19 years; 31%, within 20 to 29 years;

Table 1
Selected sociodemographics of the sample

	Urban (N = 4,298)		Rural (N = 11,311)	
	Regular alcohol users N = 270	Other N = 4028	Regular alcohol users N = 1639	Other N = 9672
Income				
Lowest quartile	22.22	24.95	23.31	25.41
Second quartile	28.15	27.63	23.49	25.30
Third quartile	23.70	24.11	26.66	25.42
Highest quartile	25.93	23.31	26.54	23.86
Education				
Illiterate	7.41	8.74	21.48	25.32
Primary school	18.15	11.15	38.13	34.12
Junior high school	28.89	30.04	32.09	33.11
Senior high school and above	45.56	50.07	8.30	7.45
Occupation				
Professional	16.30	17.01	2.93	2.07
Worker/clerk	28.52	23.01	5.92	7.26
Farmer	0	0	88.22	85.44
Retired	29.26	28.35	0	0
Unemployed	25.93	31.63	2.93	5.23
House size				
Lowest quartile	28.52	24.11	24.47	23.88
Second quartile	21.85	25.65	20.93	21.45
Third quartile	24.07	24.88	26.54	26.64
Highest quartile	25.56	25.37	28.07	28.02
Gender				
Female	1.48	54.37	10.43	57.55
Male	98.52	45.63	89.57	42.45
Age (in years)				
15–24	0.37	6.75	1.46	11.85
25–39	14.07	30.31	21.42	32.27
40–54	48.52	31.63	46.19	34.35
55–69	30.37	22.00	24.16	15.46
70–101	6.67	9.31	6.77	6.08
Marital status				
Never married	1.85	11.02	2.99	12.11
Married	95.56	81.01	90.85	81.11
Divorce	1.48	1.42	0.79	0.62
Widowed	1.11	6.55	5.37	6.16

and 37%, for 30 years or longer (data not shown). Forty-five percent of rural regular users had commenced drinking by age 25 years; 42%, between ages 25 and 39; and the remainder, at 40 years of age or older.

Urban Sample. Six percent of urban respondents were regular alcohol users. Compared to the referent, a higher percentage of regular users were ages 40 to 54 years, and few were female. Almost all regular alcohol users (96%) were married, as were four-fifths of the referent. Fewer regular users than their referent had attained an educational level of high school or above (chi square = 12.26, $p = .007$), 45% versus 50%, respectively. Although a higher percentage of regular users were high income, there was no income difference between the two groups, and they were not distinguished by occupational status or house size.

Seven percent of urban regular alcohol users had consumed alcohol within 0 to 9 years of survey, 24% within 10 to 19 years, 34% within 20 to 29 years, and the remainder for more than 30 years (data not shown). Fifty-six percent had commenced drinking by age 25 years and 35% between ages 25 and 39.

Multivariate Analysis

Results of the logistic regression analyses are reported in Table 2. Odds ratios and the 95% confidence interval for both unadjusted and adjusted values are presented, and the respective referents in each model comprise the unemployed and respondents in the lowest quartiles of income, education, and housing.

Rural Sample. Regular alcohol use for rural respondents was predicted by income, education, and wealth (house size), adjusting for age, gender, and marital status. Respondents in the third-quartile income category (OR = 1.30, 95% CI = 1.10, 1.53, $p < .00$) and the highest category (OR = 1.43, 95% CI = 1.19, 1.70, $p < .00$) were more likely to be regular alcohol users than those in the lowest quartile, the referent. Respondents with a high school education or above (OR = .67, 95% CI = .52, 0.87, $p < .00$) showed a deficit of regular alcohol use compared to the unschooled. Similar to the impact of education, the wealthiest respondents, those residing in the largest houses (OR = .74, 95% CI = .62, .87, $p < .00$) were less likely to be regular alcohol users than those residing in the smallest houses.

Urban Sample. Income and education predicted regular alcohol use among urban respondents, adjusting for age, gender, and marital status. Highest income respondents (OR = 1.83, 95% CI = 1.15, 2.91, $p = 0.01$) were more likely to be regular alcohol users than their referent, those with the lowest income. Respondents with a high school education or more (OR = .52, 95% CI = .29, 0.94, $p = .03$), or who had completed junior high school (OR = .54, 95% CI = .30, 0.96, $p = .04$), were less likely to be regular alcohol users than the unschooled. House size and occupational status were unrelated to current regular alcohol use.

Further Analysis (Hypothesis Testing Analysis)

Our multivariate analysis suggests that individuals with the highest income and those lacking formal education were the most likely to be current regular alcohol users. We now examine status discrepancy between income and education, as a determinant of regular use, by

collapsing 16 combinations of educational (illiterate, primary school, junior high, and high school and above) and income groups (the lowest quartile, second quartile, third quartile, and

Table 2

Multiple logistic regression analysis of socioeconomic status and current regular alcohol use among respondents ages 15 to 101 years, Hubei, China (N = 15,609)

	Unadjusted				Adjusted			
	p	OR	95% confidence interval		p	OR	95% confidence interval	
Rural income								
Second quartile	0.87	1.01	0.87	1.18	0.15	1.13	0.96	1.33
Third quartile	0.08	1.14	0.99	1.33	0.00	1.30	1.10	1.53
Highest quartile	0.01	1.21	1.05	1.41	0.00	1.43	1.19	1.70
Education								
Primary school	0.00	1.32	1.14	1.52	0.54	0.95	0.80	1.12
Junior high school	0.07	1.14	0.99	1.32	0.07	0.84	0.70	1.02
Senior high school	0.01	1.31	1.06	1.63	0.00	0.67	0.52	0.87
House size								
Second quartile	0.54	0.95	0.81	1.11	0.29	0.91	0.77	1.08
Third quartile	0.71	0.97	0.84	1.13	0.05	0.85	0.72	1.00
Highest quartile	0.76	0.98	0.85	1.13	0.00	0.74	0.62	0.87
Occupation								
Farmer	0.00	1.87	1.38	2.53	0.06	1.39	0.99	1.95
Worker	0.00	1.64	1.19	2.25	0.60	1.10	0.77	1.58
Management	0.00	2.53	1.64	3.90	0.17	1.40	0.86	2.28
Urban income								
Second quartile	0.43	1.15	0.81	1.63	0.11	1.38	0.93	2.05
Third quartile	0.57	1.11	0.77	1.60	0.09	1.46	0.94	2.26
Highest quartile	0.19	1.27	0.89	1.81	0.01	1.83	1.15	2.91
Education								
Primary school	0.02	1.92	1.12	3.29	0.92	0.97	0.53	1.78
Junior high school	0.59	1.15	0.69	1.90	0.04	0.54	0.30	0.96
Senior high school	0.77	1.08	0.66	1.75	0.03	0.52	0.29	0.94
House size								
Second quartile	0.07	0.72	0.51	1.03	0.06	0.68	0.47	1.01
Third quartile	0.29	0.83	0.59	1.17	0.09	0.72	0.49	1.05
Highest quartile	0.36	0.85	0.61	1.20	0.07	0.69	0.47	1.02
Occupation								
Retired	0.17	1.26	0.90	1.75	0.15	0.70	0.43	1.14
Worker	0.01	1.52	1.09	2.12	0.94	1.02	0.69	1.49
Management	0.43	1.17	0.79	1.72	0.17	0.72	0.45	1.16

the highest quartile) into four. Group One comprises respondents with low income and high education, Group Two is low- to middle-income respondents with middle to high education, Group Three is middle- to high-income respondents with low to middle education, and Group Four is high-income respondents with low education. Figure 2 displays the results adjusted for other covariates in the model (i.e., age, gender, occupation, house size, and

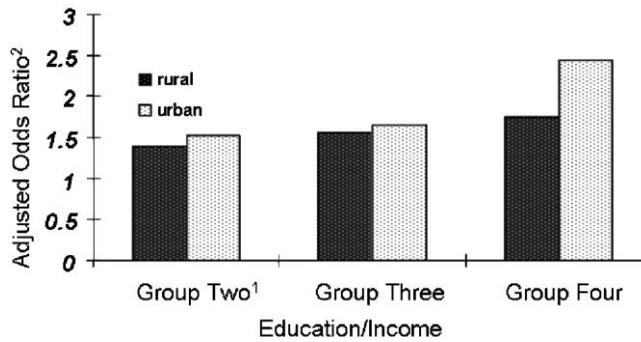


Figure 2. Odds Ratio and Reverse Combination of Education and Income. ¹Note: Four groups were created by summarizing 16 combinations of the educational levels (illiterate, primary school, junior high, and high school and above) and income groups (the highest quartile, second quartile, third quartile, and the lowest quartile) into four groups: Group One as low income with a high level of education, Group Two as low to middle income with a middle-high level of education, Group Three as middle to high income with low to middle levels of education, and Group Four as high income with a low level of education. ² Note: Odds Ratios were estimated by adjusting for sociodemographic factors: Age, Gender and Marital Status.

marital status). In comparison to Group One, rural respondents in Groups Two, Three, and Four were, respectively, 39% (95% CI = 1.13, 1.71, $p < .00$), 56% (95% CI = 1.25, 1.93, $p < .00$), and 75% (95% CI = 1.36, 2.23, $p < .00$) more likely to be regular alcohol users. Among urban respondents, Groups Two, Three, and Four, were respectively, 52% (95% CI = 1.07, 2.15, $p = .02$), 66% (95% CI = 1.12, 2.45, $p = .01$), and 144% (95% CI = 1.17, 5.09, $p = .02$) more likely to be regular alcohol users than Group One.

Discussion

This study employed several indicators to measure the impact of SES on current regular alcohol use in rural and urban China. A complex association emerged.

Among both rural and urban respondents, income was positively related to likelihood of being a regular alcohol user. This is consistent with the finding from a study conducted in Wuhan, China (Zhang, Wang, Lu, Qiu, and Fang, 2004). Presumably, people with higher incomes can better afford alcohol. In China, living standards have improved significantly over the past 2 decades. In 1985, the average annual income per capita for rural residents was $Y=398\#$ and rose to $Y=2253$ by 2000. For urban residents, the annual income was $Y=739$ in 1985 and $Y=6,280$ in 2000. Alcohol consumption also increased. In 1985, individuals purchased an average 7.80 bottles (1,000 ml) of an alcoholic beverage. By 2000, this number had increased to 10.01 bottles (National Bureau of Statistics of China, 2000). The price of a typical bottle of liquor (500 ml) ranges from $Y=20$ to $Y=300$; for a bottle of wine (750 ml), from $Y=20$ to $Y=35$; and for a bottle of beer (750 ml), from $Y=3$ to $Y=8$. As reported by Hao, Derson, Xiao, Li, and Zhang (1999), over the past 3 decades the prevalence of

#One U.S. dollar (\$) is equivalent to 8 Chinese yuan (Y=) in 2005.

alcohol users increased in concert with improved living standards. However, these researchers did not report data on current regular alcohol use.

Chinese culture has long promoted alcohol consumption, especially among men. Men capable of consuming a large quantity of alcohol are perceived as masculine (Hao et al., 1995; Zhang, Wang, Lu, Qiu, and Fang, 2004). It is also noteworthy that drinking marks successful events and happy moments in life (Cochrane, Chen, Conigrave, and Hao, 2003; Zhang, Wang, Lu, Qiu, and Fang). Chinese culture emphasizes social drinking, and drinking is perceived as the most effective way of providing social support for family members and friends, and for establishing and maintaining business relationships. In addition, drinking can ease tension and facilitate social exchange among Chinese men (Hao et al., 1995; Lin and Lin, 1982). The new Chinese free market-oriented economy has markedly expanded social and business interactions. These interactions undoubtedly have increased social drinking occasions (Zhang, Wang, Lu, Qiu, and Fang, 2004), particularly among high-income urban residents.

Contrasting with the impact of income, our study revealed a negative association between education and current regular alcohol use among both urban and rural residents. Education provides knowledge, skills, and competencies that may induce people to avoid or abandon potentially harmful behaviors (Laaksonen, Prattala, Helasoja, Uutela, and La-helma, 2003). Compared to the less educated, highly educated respondents were more likely to be cognizant of health risks associated with alcohol use. Therefore, they might be more motivated to eschew or minimize use. Our findings diverge from those arising from the only other study in China to examine education and health behaviors (Kim, Symons, and Popkin, 2004). In sampling 14,000 individuals from the 1993 China Health and Nutrition Survey, investigators in that study concluded that a higher level of education promotes unhealthy lifestyles. We offer several reasons for the conflicting findings. First, the prior study used a lifestyle index comprising four indicators: diet, physical activity, smoking, and alcohol use. Since alcohol use was *not* examined individually, its contribution to the results is unknown. Second, unlike our study, the prior study could assess whether respondents drank alcohol frequently or binged. Thus, the investigators could quantify consumption. Our data confined us to measuring prevalence of current regular alcohol use. Third, the 10-year gap in data collection (1993 vs. 2003) may be a substantial contributor to the variable results. Kim, Symons, and Popkin (2004) argued that the level of education in 1993 was not high enough to induce development of norms for a healthy lifestyle in China. However, since that time, the overall educational attainment of the Chinese population has risen appreciably with rapid industrialization and urbanization. Middle-school graduates represented 23% of the population in 1990. By 2000, their representation had risen to 34%. During the same period, people with a junior college education or higher increased from 1.4% to 3.6% of the national population. Correspondingly, the prevalence of illiterate Chinese declined from 16% to 7% (William, 2001). Also since 1993, more literature on alcohol use and its impact on health has been published and disseminated. Hence, on the one hand, there is increased opportunity for alcohol consumption in China, and alcohol has become more affordable. On the other hand, there has been a rise in personal awareness of the potential adverse health effects from abuse. Because alcohol is a legal substance in China, and the survey asked no questions about problem drinking, respondents

faced no risk in responding to the alcohol questions that were posed. Although answering those particular questions provides no direct benefit to respondents (Kleinig, 2004), their participation in the larger survey is important for planning purposes and it could yield general health benefits.

Our study found that house size impacted current regular alcohol use among rural residents, but not urban residents. There are no relevant studies that we can draw on for discussion. The differential impact of house size may reflect rural–urban variation in the relationship between current regular alcohol use and wealth. Individuals in rural areas with a higher income were more likely to be regular alcohol users, whereas those with larger houses were less likely to be so than their opposites. Traditionally, house size has been highly valued among rural residents. Farmers would often spend their life savings in building a house for themselves and their sons. In that instance, house size represents accumulated family wealth. More importantly, house size reflects personal saving behavior. Alcohol is expensive. Compared to counterparts with smaller house, rural residents with larger ones would probably be more inclined to save money rather than spending it on alcohol. At this juncture, house ownership is still the most important indicator of wealth for farmers. Although the income gap has widened among farmers, in rural areas overall income is still quite low and building a house likely requires lifelong saving for many individuals. Hence these seemingly contradictory findings on the effect of income and house size on regular alcohol use seem plausible within the Chinese cultural context and social structure. Until recently, urban housing had been assigned to individuals by their work unit. However, urban residents have recently begun to purchase their own apartments. This change prompts the need for more research on wealth (e.g., house size) and alcohol use.

Our bivariate analysis results confirmed that the correlation between income and education is not linear. Individuals with relatively higher income might have a lower level of education, and vice versa. This is particularly true among urban residents. Our research highlights the importance of examining each indicator of SES on current regular alcohol use independently in such a transitional society.

Study's Limitations. Several study limitations need to be noted. The majority of previous studies found that individuals of higher SES consume alcohol more regularly than those of lower SES (Makela, 1999; Marmot, 1997; Sutton and Godfrey, 1995), whereas lower SES groups were more prone to alcohol problems and dependency (Kunz and Graham, 1998; Lynch, Kaplan, and Salonen, 1997). Constrained by the nature of the available alcohol data, the outcome variable in our study, current regular alcohol use, was dichotomous. The referent, others, comprised a very mixed group—lifetime abstainers, 12-month abstainers, current light drinkers, and former drinkers. Moreover, our study was unable to differentiate type of alcoholic beverage (i.e., beer, wine, and liquor) or investigate adverse sequelae of drinking. With due sensitivity to rural/urban residence, longitudinal studies are needed in China to investigate quantity and frequency of alcohol use collectively, and by type, in relation to such alcohol-consumption-related problems as dependency, disease, and injury. Kim, Symons, and Popkin (2004) proffered that the relationship between lifestyle (including alcohol use) and SES is strongly confounded by gender. Because so few alcohol users were female, we could not conduct separate analyses on male and female respondents.

Oversampling of female respondents will be necessary in future research to examine how gender mediates the relationship of SES, rural–urban residence, and alcohol use.

RESUME´

Le rapport entre la situation socio-économique et la consommation actuelle et régulière d'alcool a été étudié séparément chez les habitants des zones urbaines et ceux des zones rurales dans la province de Hubei en Chine. L'étude est basée sur une enquête menée en 2003 par le Third Chinese National Health Service Survey. Un échantillon probabiliste de 15 609 sujets, âgés de 15 à 101 ans, a été sélectionné parmi les personnes interrogées. La consommation d'alcool est désignée comme variable binaire (consommateurs réguliers actuels contre autres). Les analyses multivariées comprennent quatre indices de la situation socio-économique : le revenu, le niveau d'éducation, la profession, et la grandeur de la maison. Les résultats indiquent une association positive entre le revenu et la consommation actuelle et régulière d'alcool et par contre une association négative entre celle-ci et le niveau d'éducation. Tant chez les habitants des zones urbaines que chez ceux des zones rurales, la consommation actuelle et régulière d'alcool est basse chez les mieux éduqués et chez les personnes au revenu plus bas. Il est nécessaire de faire des recherches supplémentaires qui tiendraient compte du volume et de la fréquence de consommation pour mieux comprendre l'impact de l'alcool sur la santé des chinois en milieu urbain et rural.

RESUMEN

La asociación entre el estatus socioeconómico (SES por sus siglas en inglés) y el uso actual y regular del alcohol fue examinado separadamente para los residentes de las áreas urbanas y las áreas rurales de Hubei, China utilizando la tercera Encuesta de Servicios Nacionales de Salud en China realizada en el año 2003. Una muestra de probabilidad de 15.609 encuestados, cuyas edades estaban entre 15 y 101 años, fueron seleccionados del estudio base. El uso del alcohol fue una variable dicotomizada (usuarios regulares actuales versus otros). El Análisis Multivariable incorpora cuatro indicadores relacionados con el estatus socioeconómico: ingreso, educación, ocupación y el tamaño de la familia. Investigación de las discrepancias en el estatus indican que el ingreso estaba asociado positivamente con la posibilidad de uso actual y regular del alcohol mientras que la educación fue asociada negativamente. Para los residentes de las dos áreas urbanas y rurales, la probabilidad de uso actual y regular del alcohol fue más pequeña que para aquellos con mayor nivel de educación y en una categoría de bajo ingreso. Se necesita investigación adicional, relacionada con los factores en cantidad y frecuencia para entender como el uso del alcohol entre la población China en áreas urbanas y rurales tiene un impacto en su salud.

中国城市与农村居民社会经济地位和饮酒行为关系研究

摘要

本研究旨在探讨社会经济地位对城市与农村居民饮酒行为的影响。分析数据源于湖北省 2003 年全国第三次卫生服务调查。本文的样本包括 15,609 位（15 到 101 岁）湖北城市与农村居民。饮酒行为被定义为两分变量（饮酒者和非饮酒者）。本文用 4 个指标来测量社会经济地位：收入，教育，职业，和住房。多元回归分析揭示了经济收入与饮酒行为呈正相关，而受教育程度则与饮酒行为呈反相关。在城市与农村中，教育程度高的人群及低收入的人群饮酒率最低。今后应加强对饮酒量和饮酒率的研究，以进一步揭示饮酒行为对城市及农村居民健康的影响。

Glossary

Socioeconomic status (SES): SES was indexed by a composite of educational attainment, household income, occupational status, and wealth.

Current regular alcohol user: A respondent who reported consuming at least 12 alcoholic drinks in the 12 months prior to the survey.

Urban residents: Residents who were urban dwellers at the time of data collection— included migrants working in urban areas.

Rural residents: Residents who were residing in rural areas at the time of data collection— excluded migrants working in urban areas.

China: People's Republic of China, which includes mainland China, Hong Kong, and Macau.

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