

Correlation between Alcohol Dependence Tendency and Agricultural Injury in Rural Residents over 15 Years Old in Hainan Province

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Abstract: Objective To analyze the correlation between alcohol dependence tendency and agricultural injury in rural residents over 15 years old in Hainan province. **Methods** A total of 1776 rural residents over 15 years old from 5 counties of Hainan province were investigated by CAGE simple scale and agricultural injury questionnaire. **Results** The incidence of alcohol dependence tendency was 23.25% in rural residents over 15 years old and 64.5% in people with drinking habits in Hainan province. There was a significant difference in the incidence of agricultural injuries between those with alcohol dependence tendency and those without alcohol dependence tendency ($\chi^2 = 19.533$, $P < 0.001$), and those with alcohol dependence tendency had a higher incidence of agricultural injuries than those without alcohol dependence tendency. **Conclusion** The incidence of alcohol dependence tendency is higher in rural residents over 15 years old in Hainan province, especially in people with drinking habits. Residents' alcohol dependence tendency is related to the incidence of agricultural injuries. Residents' alcohol dependence tendency is a risk factor of agricultural injuries. Controlling alcohol consumption is one of the main measures to prevent agricultural injuries.

Keywords: Alcohol Dependence Tendency; Rural Residents; Agricultural Injury; CAGE Simple Scale

Introduction

With the continuous development of economy and society, the improvement of material living standards and the increasing social contacts, drinking culture has gradually developed into an essential part of various daily life and practical work of people in modern society, and a series of social problems derived therefrom have gradually aroused widespread social concern. Alcohol consumption is a habit and behavior of life, and if the time spent drinking and the amount of drinking reach a certain degree, it will cause drinkers to experience a tendency to alcohol dependence, and somatization and withdrawal symptoms, which is a common mental illness, and this symptom is called alcohol dependence syndrome (ADS)^[1]. Data show that in 2018, the annual per capita alcohol consumption in China was 7.14 liters, and the rate of moderate to severe drinkers in adults was 22.6%, with such a large annual per capita alcohol consumption and the rate of severe drinkers, the prevalence of ADS increased year by year. Alcohol consumption is one of the risk factors causing agricultural injuries, and perennial alcohol dependence is also likely to lead to mental disorders depression^[2-4]. In this study, we analyzed the correlation between alcohol dependence tendency and agricultural injury in rural residents over 15 years of age in Hainan Province, and provided a scientific basis for improving and promoting the quality of life of rural residents in Hainan Province.

1. Object and method

1.1 Study subjects and sampling methods

The study subjects were rural residents over 15 years of age in Hainan Province. Participants were included in the study: permanent rural residents who had lived in Hainan for more than 6 months before the survey date; and those who could communicate normally. Exclusion Criteria for Study Subjects: Difficulties in communication: Previous history of mental illness: Refusal to cooperate Unwilling participants.

A multi-stage random cluster sampling method was used. First, five cities and counties were randomly selected from Hainan Province by random sampling method, one to two townships were randomly selected from the five cities and counties sampled, and then three to five villages were randomly selected from the townships sampled to conduct a door-to-door face-to-face survey of villagers over 15 years of age in the villages sampled. 1776 people were actually investigated in this study.

1.2 Investigation tools

(1) Investigation of the basic situation of the study subjects: gender, ethnicity, age, marital status, education level, smoking, and alcohol consumption.

(2) CAGE Brief Scale^[5-6], which includes① Can you abstain from alcohol? ②Do you feel irritable when others advise you to stop drinking?③ Does alcohol make you feel guilty? ④ Are you used to drinking a glass of wine to refresh yourself after getting up in the morning? The scale evaluates whether the respondent has chronic alcohol dependence and contains four questions. A score of 2 or more on the scale was judged as a tendency for respondents to be alcohol dependent. The overall reliability coefficient for this scale in this study was 0.93.

1.3 Statistical analysis methods

The questionnaire was double-entered using epidata software. SPSS 22.0 was used for statistical analysis of data. Describe the adoption rate or constituent ratio of enumeration data, and compare each group with chi-square test. $P < 0.05$ was considered statistically significant.

2. Results

2.1 Demographic data

A total of 1776 rural residents aged 15 years and above were investigated. The average age of the investigated population was (45.10 ± 15.703) years; 952 (53.6%) were male and 824 (46.4%) were female. There were 1182 Han nationalities (66.6%), 529 Li nationalities (29.8%), and 65 other nationalities (3.7%).

2.2 Correlation Analysis between Alcohol Dependence Tendency and Agricultural Injury

Among the investigated population, 413 people had alcohol dependence tendency, and the incidence of alcohol dependence tendency was 23.25% (413/1776). There were 610 respondents who had drinking habits in their lives, and the incidence of alcohol dependence tendency was 67.7% (413/610) in those who had drinking habits in their lives.

In the investigated population, there was a significant difference in the incidence of agricultural injuries between those

who could abstain from alcohol and those who could not abstain from alcohol ($\chi^2 = 13.884, P < 0.05$), and the incidence of agricultural injuries was higher in those who could not abstain from alcohol than in those who could abstain from alcohol; there was a significant difference in the incidence of agricultural injuries between those who had a tendency to alcohol dependence (CAGE scale score ≥ 2) and those who had no tendency to alcohol dependence (CAGE scale score < 2) ($\chi^2 = 19.533, P < 0.05$), and the incidence of agricultural injuries was higher in those who had a tendency to alcohol dependence than in those who had no tendency to alcohol dependence. See Table 1 for details.

Table 1 Correlation analysis between alcohol dependence tendency and agricultural injury among rural residents in Hainan

Item		Number of cases with injury (%)	Number of cases without injury (%)	χ^2	<i>P</i>
Can you stop drinking?	YES	33 (16.5)	167 (83.5)	13.884	<0.001
	No	134 (30.5)	306 (69.5)		
Have you felt irritable when others advised you to stop drinking?	YES	61 (30.3)	140 (69.7)	2.75	0.097
	No	106 (24.1)	333 (75.9)		
Does drinking make you feel guilty?	YES	24 (25.5)	70 (74.5)	0.018	0.893
	No	143 (26.2)	403 (73.8)		
Did you get up in the morning and get used to drinking a glass of wine to refresh your mind?	YES	12 (36.4)	21 (63.6)	1.903	0.168
	No	155 (25.5)	452 (74.5)		
CAGE scale score	≥ 2 points	159 (30.1)	254 (20.4)	19.533	<0.001
	< 2 points	370 (69.9)	993 (79.6)		

3. Discussion

In this survey, the incidence of alcohol dependence tendency in rural residents over 15 years of age in Hainan Province was 23.25%, which was higher than the incidence of alcohol dependence tendency in agricultural machinery operators (14.1%) studied by Zhao Na [7], indicating that the incidence of alcohol dependence tendency in rural residents in Hainan Province was higher, and it is necessary to carry out rural health education activities to promote drinking health and preach drinking education for rural residents in Hainan Province.

Compared with those without alcohol dependence tendency, those with alcohol dependence tendency had a higher incidence of agricultural injuries, which was consistent with the results of Wang Limin et al. [8], agriculture was an occupation with a higher injury rate, while this study was mainly rural residents in Hainan, Hainan had a rich wine culture, while excessive alcohol consumption would lead to confusion, which would increase the incidence of agricultural injuries when performing agricultural work. It is necessary to carry out health education on the prevention of agricultural injuries in Hainan area, further improve the awareness of preventing the occurrence of agricultural injuries, control alcohol consumption, and strengthen the training of agricultural workers on relevant agricultural safety knowledge.

In short, drinking and related problems have attracted more attention in China in recent years, especially for rural residents who account for the vast majority of China's population. With the rapid growth of income, their living consumption level also presents an increasing trend, and the proportion of alcohol consumption increases accordingly, and the resulting problems arise in various aspects. For example, the conclusion of this study shows that the tendency of alcohol dependence

is related to the incidence of agricultural injuries. We should attach importance to alcohol-related problems and actively carry out health publicity and education among the whole population to guide people to drink a little and drink low-alcohol alcohol.

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