The relationship between beverage consumption and overweight of university students

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Objective Previous studies have shown a clear correlation between university students' eating habits and the rate of obesity. According to the WHO's information, obesity was not only a chronic disease that did harm to health, but also a risk factor for a variety of chronic disease such as type 2 diabetes, coronary heart disease and respiratory disease, etc. With the booming of economy and the continuous improvement of university students' living standard, the growth of university students' drinking consumption and the diversification of consumption patterns, beverage had gradually become a part of university students' daily diet. The relationship between intake of drinks and health in university students is not clear. Knowing the relationship between the consumption habits and the prevalence rate of overweight in university students can help university students to establish a healthy lifestyle, control weight and lead a reasonable beverage consumption. Thus a questionnaire survey was conducted and students were divided into beverage group and non-beverage group for horizontal comparison, so to investigate the relationship between the beverage consumption habit of university students and the prevalence of overweight.

Methods We conducted a questionnaire survey on university students (130 males and 115 females) from a university through a self-designed questionnaire. The method of investigation was a self-filling questionnaire which includes the consumption of beverages, the frequency and the variety of beverage per week. All the subjects' height, weight, waist circumference and hip circumference were measured, the BMI and waist-hip ratio were calculated. Alpha reliability coefficient, non-parametric test, chi-square test, kruskal-wallis H test, non-conditional Logistic regression analysis of dichotomies and Logistic multivariate analysis were used for statistical analysis of the data.

Results The intake of all kinds of beverage in university students was as follows: the sugary beverage (carbonic acid and juice) was up to 55.5%, the dairy products was 19.5%, the tea beverage (no sugar or low sugar) was 12.5%, and the functional beverages was 25%. Male students drunk carbonic acid beverage more than female (P<0.01), and female students drunk fruit juice was significantly higher than that of male students (P<0.01).The overweight and central obesity rate of male and female students were roughly equivalent (P > 0.05). Overweight and obese (BMI ≥24) students consumed more sugary drinks than normal weight students (P<0.05). Multifactor's logistic regression analysis showed that the risk factors associated with overweight and obesity were sugary drinks and purchase times; the risk factors associated with central obesity included sex and the frequency of beverage purchased.

Conclusions The consumption all kinds of sugary drinks in overweight and obese university students were higher than that of normal weight students. Male university students liked "carbonated" and "tea" drinks more than female university students, while female students liked "juice" and "milk" drinks more than male students. Sugary drinks could be a risk factor to obesity. And female students are more likely to be central obese than male students. There is a certain correlation between the intake of sugary beverages in university students' overweight and central obesity. This research shows that the intake of sugar beverages was closely correlated to overweight and central obesity．It's important for university students to reduce the intake of sugary beverages appropriately and establish a correct and healthy consumption concept of beverage.