

Investigation of Nitrite Cognition Among College Students

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Abstract: The differences of nitrite cognition among medical students in Guangxi University of Science and Technology were studied. SPSS27.0 software was used for data analysis. There were statistically significant differences in the recognition scores of nitrite among students of different gender, age, education, major and grade ($P < 0.05$), and the content of nitrite in the tested samples were all within the national safety limit standard. The students surveyed in this study had a high awareness rate of nitrite and poisoning hazards, and different students had different awareness of nitrite.

Keywords: Nitrite, Cognition, Fried baked goods, Content, Analyze.

1. Introduction

With the continuous improvement of people's living standard, the diversified development of food economy. Many fried and grilled foods that impact people's taste buds are also becoming more and more popular, especially among young groups of college students. As a food additive for fried and baked foods, nitrite not only plays a certain anti-corrosion role, but also improves the taste of food and changes the color of food [1, 2], and nitrite is also produced in the processing of food, such as barbecue, frying and other processes. Although nitrite can be used as a food additive, because nitrite toxicity and carcinogenicity are relatively strong, it is necessary to moderate intake. China has strict regulations on the content of nitrite in food, and nitrite in the diet generally does not harm human health, but when the total content of nitrite ingested reaches 0.3-0.5g, it will cause poisoning, and when the total content of nitrite ingested reaches 3g, it will cause death [3]. The incident of nitrite food poisoning caused by fried chicken neck occurred on November 25, 2008 [4], and the incident of nitrite food poisoning occurred on June 10, 2014, when students of a university in Nanjing ate roadside barbecue for dinner [5]. Therefore, the nitrite food poisoning of these students caused by fried barbecue food has aroused people's attention to the nitrite content of fried barbecue food. Therefore, in order to understand the nitrite cognition of students in a college in Liuzhou City, this paper draws up a questionnaire and selects students in the Medical Faculty of Guangxi University of Science and Technology to investigate the nitrite cognition.

2. Objects and Methods

2.1. Objects

A total of 253 students from the Medical Faculty of Guangxi University of Science and Technology were selected by random sampling method. Among them, 22.92% were male students and 77.08% were female students

2.2. 1.2 Survey Methods

The questionnaire survey was prepared by ourselves and distributed by the questionnaire Star platform. The contents of the questionnaire survey mainly include two parts: the first

part is the basic information of the respondents, including the gender, age, education background, major, grade and family residence of the surveyed students; The second part is nitrite cognition. It includes whether you have heard of nitrite, whether you have deliberately to understand nitrite, nitrite to understand the way, how to produce, how much nitrite intake is harmful to the body, whether the disease rate is high, whether you can distinguish from the senses whether the food contains nitrite, what food contains nitrite, often eat food, eat overnight vegetables, grilled fried food Food consumption frequency, place of purchase of baked and fried food, nitrite hazard, how to reduce nitrite intake.

2.3. Statistical Analysis

Microsoft Excel 2017 was used to establish the database, and SPSS27.0 software was used for statistical analysis. The statistical data were described by percentage or composition ratio (%), and the differences between groups were described by 2 test and non-parametric rank sum test.

3. Results and Analysis

3.1. Basic Information of survey objects

In this survey, 254 actual questionnaires and 253 effective questionnaires were recovered, with an effective recovery rate of 99.60%. Among the survey respondents, more women than men, more students aged 19-21 and 22-24 than other age groups, and 86.17% of the survey respondents live in rural areas.

3.2. Analysis of students' cognition of nitrite

After normality test analysis, it was found that students with different gender, age, education background and family residence had a skewed distribution of nitrite recognition scores. Therefore, non-parametric rank sum test should be used to compare the nitrite recognition scores of students with different gender, age, education background and family residence. Through normality test analysis, it is found that the recognition scores of nitrite among students of different majors and grades are normally distributed. Therefore, the analysis of variance should be used to compare the recognition scores of nitrite among students of different majors and grades. There were significant differences in the

recognition scores of nitrite among students of different gender, age, education and grade ($P < 0.05$). The cognition score of medical imaging major students has a relatively small fluctuation range, and the cognition score of other different gender, age, education, major, grade and family residence distribution has a relatively large fluctuation range.

3.3. Students' knowledge of nitrite

Among the 253 respondents, 246 students were aware of nitrite, with an awareness rate of 97.23%. The most important ways of nitrite cognition are studying in school, TV network and newspapers and books. In terms of nitrite food sources, most students (92.89%) chose preserved products, followed by overnight dishes (73.91%), fried and baked foods (57.31%), and stale vegetables (55.34%).

3.4. Students' nitrite food intake and purchase

Students often eat nitrite-related food is barbecue food (58.50%) and fried food (56.52%), followed by pickled food (45.06%). Among the students who have the habit of eating overnight dishes, most of them eat it occasionally (77.87%), followed by 17.93% who often eat it, and only 4.74% who never eat it. Among the frequency of eating fried and baked food, 84.19% of the students ate it occasionally, 14.23% often, and only 1.58% never. Among students' favorite places to buy baked goods, 36.76 percent were around the school, followed by 30.43 percent for "Whatever tastes good," and 17.39 percent for downtown and 13.83 percent for school cafeterias.

3.5. Students' awareness of nitrite hazards

3.5.1. Overall students' awareness of nitrite poisoning hazards

The study found that 77.47% of the students believed that the hazards of nitrite poisoning were "dizziness, headache, palpitations, weakness and chest tightness", 75.49% believed that the hazards were "nausea, vomiting, abdominal pain and diarrhea", and 52.17% believed that the hazards were "the skin and mucosa of the whole body showing varying degrees of cyan and purple". 64.82% believed that the harm was "coma, loss of consciousness, respiratory failure or even death", 6.72% believed that the harm was "in addition to the above several other hazards", and 15.02% did not know the harm.

3.5.2. Students' cognition of nitrite poisoning hazards with different characteristics

In terms of the cognition of dizziness, headache, palpitation and weakness caused by nitrite poisoning, there were statistically significant differences among students of different genders and educational backgrounds ($P < 0.05$), among which female students were higher than male students ($2=0.034$) and undergraduate students were higher than higher vocational students ($2=4.514$). In terms of the cognition of nitrite poisoning hazards including nausea, vomiting, abdominal pain and diarrhea, there were statistically significant differences between different genders ($P < 0.05$), and female students were higher than male students ($2=14.068$). In terms of the cognition of nitrite poisoning hazards, the skin and mucosa of the whole body presented different degrees of purple, the cognition difference of students with different gender, education background, major and grade was statistically significant ($P < 0.05$), among which the female students were higher than the male students ($2=4.726$) and the undergraduate students were higher than the vocational students ($2=9.840$). In terms of the

cognition of nitrite poisoning hazards including coma, loss of consciousness, respiratory failure and even death, the cognition difference of students with different education and majors was statistically significant ($P < 0.05$), and the undergraduate students were higher than the vocational students ($2=5.924$). There was no statistical significance in the cognition of nitrite poisoning among students with different characteristics ($P > 0.05$). In terms of unclear cognition of the hazards of nitrite poisoning, the cognitive differences of students of different genders are as follows:

1.2.6 Students' cognition of ways to reduce nitrite intake

Among the 253 students, 230 (90.91%) believed that the intake of nitrite could be reduced by eating more fresh fruits, vegetables and meat, and 115 (45.45%) believed that the intake of nitrite could be reduced by cryogenic preservation of food. There were 227 people (89.72%) who believed that the intake of nitrite could be reduced by eating less salted food, not eating salted vegetables with curing time of about 7 days, and eating less salted vegetables with curing time of 15 days, and 67 people (26.48%) thought that the intake of nitrite could be reduced by frequent exposure to the sun. There were 142 people (56.13%) who believed that the intake of nitrite could be reduced by not drinking the remaining water of the boiler cooked for a long time, 17 people (6.72%) believed that the intake of nitrite could be reduced by other ways besides the above, and only a few people (3.16%) were not clear about the way to reduce the intake of nitrite.

4. Discussion Section

Students of different gender, age, education, major and grade had statistically significant differences in nitrite recognition scores ($P < 0.05$), and the fluctuation range of nitrite recognition scores of respondents with different characteristics was relatively large in the whole questionnaire survey. Among the 253 students surveyed, the awareness rate of nitrite reached almost 100%, and most of the ways of understanding are through school study, TV network and newspapers and books. Most of the students who contain nitrite in food know the basic food sources. After learning that nitrite is produced from barbecue food, fried food and pickled food, more than half of the students will often eat these things, and few of the students surveyed will buy these foods in the school cafeteria while most of them will choose to buy them outside the school. In terms of the cognition of nitrite poisoning hazard, most students understand its basic hazard and there are differences in the cognition of nitrite poisoning hazard among students with different characteristics.

5. Conclusion

To sum up, on the basis of understanding nitrite, most students often eat barbecue, fried and pickled foods that can produce nitrite outside the school, so it is recommended that students should minimize the consumption of these foods and choose food stalls that have been tested for food. Both the overall score of awareness of nitrite and the score of awareness of the hazard of nitrite poisoning are different among students with different characteristics. Due to the limitations of conditions, the number of respondents in this survey is relatively small, the number of students with different characteristics is unbalanced, and the survey objects are all medical students, which may cause sampling errors in the overall survey. Therefore, offline surveys can be conducted to further verify this survey by optimizing the

survey plan, expanding specialties, increasing sample size, and so on.

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