Research on the path of the prevention and control of toxic and harmful substances in take-out food for college students

Wei Lu
Personnel Division, Shanghai University of Political Science and Law, Shanghai 201701, China

*Corresponding author: lwly1201@163.com

Abstract. The paper expounds the existing circumstances of take-out food for college students, analyzes the classification and input channels of toxic and harmful substances in university takeout and puts forward that the market supervision department and the online catering service platform should strengthen the cooperation in food safety supervision. In addition, there is no doubt that catering merchants and take-out distribution companies should create a good environment of production and distribution. Similarly, colleges and universities should pay attention to do a good job in propaganda and education of laws and regulations on take-out food safety for college students, forming a system to protect the take-out food safety for college students.

1. Introduction
In recent years, with the advent of the Internet plus era and the improvement of people’s livelihood, the development of the food delivery industry has gained strong momentum. With its low price and speedy service, the food delivery industry has been quickly accepted by the public and become the driving force of the overall development of the food and catering industry.

In this booming industry, college students are one of the the main consumers. On the one hand, they enjoy the convenience and richness of their daily life brought by takeaway food. On the other hand, they suffer from the troubles caused by food delivery. In particular, the “problematic takeaways” frequently exposed recently have an adverse impact on the physical and mental health of these loyal customers of online food delivery platforms.

The paper discusses the current situation of the takeaway food services provided to college students, the poisonous and hazardous substances contained in the takeaway food and the approaches to prevention and control of “problematic takeaways” on campus, in order to identify the root causes of these problems, provide corresponding solutions and create an environment free of food safety issues for college students [1].

2. Materials and methods

2.1. Research on the takeaway food service provided to college students
This paper uses a method of sample survey. “A tap on the mobile phone, food delivery at the door” has become a common lifestyle for many young people. According to thestatisticsofiiMedia.cn, the peak of China’s online delivery market between 2011 and 2018 was 241.38 billion yuan; the peak number of
China’s fast delivery users between 2014 and 2018 was 482 million, among which people under the age of 30 accounted for up to 80%, and people under the age of 24 mainly used fast delivery service for takeaway food. The age distribution of consumers on various Chinese online food delivery platforms is listed in Fig. 1. Compared with traditional college cafeterias, food delivery platforms have quickly adapted to the daily needs of young college students to the greatest extent and become an important part of the diet culture of college students for its great variety of food choices and fast delivery. Therefore, college students have become the main force in the takeaway food consumer market.

2.2. Analysis of current problems
This paper analyzes the existing problems from the current situation of the takeaway food service provided to college students and seek the way to form a system to protect the take-out food safety for college students.

3. Results and discussion

3.1. Poisonous and hazardous substances in the takeaway food consumed by college students
The poisonous and hazardous substances in takeaway food provided to college students can pose serious risks. College students, as unsophisticated consumers, tend to be misled by pictures, prices and reviews when choosing their food due to limited social experience and lack of awareness of food safety. They often choose food with quality and hygiene issues. In addition, a research shows that college students do not pay enough attention on the protection of their rights as consumers when dealing with problematic takeaway food. More than half of the respondents of the 762 questionnaires said they were dissatisfied with the how the restaurants responded to their complaints, but only 12% went on to file their complaints with relevant authorities [2]. It is the indifference of college students to their own rights that allows businesses to further violate their rights. As a result, there are now even more severe problems arising from takeaway food containing poisonous and hazardous substances entering campuses.

3.2. Food hygiene and safety issues
In 2015, the story of a Meituan delivery person who received complaints for failing to deliver food on time made the news, revealing the biggest disgrace of the food delivery industry. Since then, netizens all over the country have started to complain about the problems of online delivery platforms such as “Meituan Takeaway”, “Baidu Takeaway” and “Ele.Me”. Although the “dark sides” revealed by netizens vary, most of the problems can be summarized into the following types:

Of the 21 complaints randomly selected across all online platforms are centered on the after-sales service of the platforms and merchants. For example, in July 2016, a consumer complained about an upset stomach after having food ordered from Meituan Takeaway. When communicating with the platform, the consumer was treated badly and given invalid coupons in compensation.
On September 9, 2016, a complaint was filed for maggots found in food ordered from Meituan Takeaway. On the 20th of the same month, Meituan Takeaway was reported again for body hair found in its takeaway food [3]. In July of the same year, Ele.Me was accused of giving out licenses to merchants with fake restaurant photos and poor food hygiene. Among the series of problems exposed from the very start, the problem with the preservation of raw materials and the hygiene of food processing environment has been one of the most criticized by netizens. Now 4 years later, this problem remains unsolved, which is quite disappointing. At the same time, it reflects the poor governance of competent departments, insufficient regulation of platforms, and incomplete qualifications of merchants.

According to statistics, out of every 100 complaints about food delivery chaos, there are 15 cases involving problematic delivery equipment and food packaging. A number of media outlets in the country have made reports on this issue. On March 22, 2018, Eastday.com revealed that the delivery chests used by Ele.Me delivery people are unhygienic and usually covered in stains. On April 28 of the same year, the Shanghai-based Dragon TV reported that the food delivery industry prevailed plastic packaging and that degradable paper packaging was rarely used, revealing the environmental consequence of inappropriate food delivery packaging [4]. On March 15, 2019, a TV reporter randomly selected 8 disposable meal boxes for inspection during an on-site interview, and the results showed that half of the meal boxes were unqualified. The fact that the packaging quality is below the mark has become a well-known secret within and outside the food delivery industry. However, the merchants and platforms did not receive any severe punishment or useful instructions from regulatory authorities.

The aforementioned cases all involve food hygiene and safety issues to varying degrees. The problematic takeaway food and potential safety hazards in the process of delivery have reached such a point that cannot be ignored. College students, as potential customers of the online food delivery platforms, are also one of the most vulnerable groups to poisonous and hazardous takeaway food.

3.3. The cause of polluting food
The common poisonous and hazardous pollutants in takeaways can be simply classified into three categories: microbial pollutants, chemical pollutants and physical pollutants, according to their external manifestations [5].

The stages during food production that are most likely to cause polluted food due to microbial pollution are “ingredient preservation and classified storage” and “production and processing”. At these two stages, due to the inappropriate practices of the producer, such as putting dry and wet ingredients together or raw and cooked ingredients together during preservation, the cross-environment will breed bacteria ingredients and eventually cause spoilage. If the merchant is not aware of this or intends to sell the stale products anyway, the takeaway food produced in such environment has a congenital deficiency [6]. Also, microbial pollution may happen when food is being processed or made (for example, animal and plant virus infection may happen in the food that is not fully cooked or contains spoiled ingredients) and when food is transported over long distances (for example, food spoilage and the breeding of pathogenic bacteria may happen).

Compared with microbial pollution and physical pollution, chemical pollution is a more common type of pollution in the process of making takeaway food. It may happen due to contaminated raw materials (pesticides residues) and kitchen equipment (heavy metal residues), staff’s improper contact with food (poisonous microelements), and bad practices during food processing and cooking (pesticide residues and undercooked food) and food packaging and delivery (chemical hazards coming off from the plastic packaging). Stones, glass, metal and unknown additives are the most common physical pollutants. To address such pollution, the only way is to strengthen the supervision of food production, sales and delivery.

3.4. Results of the safety of the takeaway food
For one thing, biological, physical and chemical pollution that happen in the production, storage, transportation and consumption of takeaway food threatens consumers’ physical and mental health, triggering gastrointestinal diseases and even posing dangers to consumers’ lives. For another, if the
problem of poisonous and hazardous substances in takeaway food still cannot be solved after a long time, it will inevitably affect the overall development of the food delivery industry and become a constraint to the progress of the industry.

To stop the poisonous and hazardous substances contained in takeaway food from harming the physical and mental health of college students, and to create a good environment for the development of food delivery industry, the following measures can be adopted to prevent and solve the problem of the poisonous and hazardous substances contained in takeaway food delivered to university campuses:

Market regulatory authorities should clarify the responsibilities and obligations of the merchants subject to supervision and other third-party participants (such as online food delivery platforms), emphasize the consequences for the merchants who violate the law, and increase the cost of breaking the law. For merchants and platforms in violation of the law, regulatory authorities should, in addition to educating them about relevant laws and ethics, increase the fines and impose administrative punishments such as suspension of business and revocation of licenses on merchants and online food delivery platforms according to the seriousness of the offense. Thus the merchants and online food delivery platforms will be informed of the severe consequences they may face and pay more attention to food safety of takeaways.

4. Conclusion
In a word, as takeaway food has become an indispensable part of college students’ daily diets, the prevention and control of poisonous and hazardous substances in takeaway food delivered to university campuses will also become a normalized practice. Only through the joint collaboration of all actors, including food safety regulatory authorities, universities, all sectors of society and college students, can we protect college students from unsafe takeaway food.

References
[1] Song YM 2019 Modern Food 10 21-32
[2] Zhu HN, Lin XS 2019 Journal of Chongqing Technology and Business University 10 101-106.
[3] Chen YL 2019 Masterpieces of Nature 02 75-89
[4] Jia X 2020 Meat Research 08 46-58
[5] Zhou ZH 2017 Journal of Wuxi Institute of Technology 06 34-51
[6] Liu FY, Ling TJ, Peng JL, Yuan XW, Mu HT 2016 Modern Food 24 114-125