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From Bootcamp to Infinite Snacking:
Facts and Resolutions about the Obesity of Chinese Adolescents

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Abstract

This research provides vital context for those who want to understand the social rationale behind the obesity and overweight epidemic among Chinese adolescents, who are born under the One-Child Policy. What are the social political and economic factors that contribute to this epidemic? By employing the qualitative interviews, this research shows the real-life struggles of Chinese adolescents and parents experience due to many facts like: educational pressures, misinformation about diets and so forth.

Keywords: Chinese Adolescents Overweight, Urban, One-Child Policy, Open-Up Policy

1. Introduction

In recent years, Chinese adolescents are facing an incredible challenge that no other generations have dealt with before: obesity. There is no doubt that living conditions of Chinese residents are getting better as the economy development accelerates from the execution of Open-Door Policy.¹ According to the National Development and Reform Commission, both Chinese urban and rural area's Engel's coefficient, which is an index that shows the percentage of income spent on food, declined to 30% for the first time in history in 2017.² It is obvious that Chinese residents changed their living conditions and have drastically have changed their lifestyles. Subsequently, previous stereotypes have shifted from the notion of Chinese city dwellers, who oftentimes struggled due to famine as a by-product of the Great Leap Forward, to individuals gaining access to a various array of food.

The sudden transition of food scarcity to an overabundance of food supply in the market has caused a major shift in Chinese daily diet habits. For example, the typical meal of a Chinese family has drastically altered from vegetables and coarse grains to fatty meats and fine grains.³ Due to new diet practices, obesity has also started to become an issue for Chinese adolescents. According to the most recent National Survey on Chinese Students' Constitution and Health, the prevalence of obesity for Chinese children and adolescents has increased from 7.5% to 13.1%

¹ Open Door Policy, sometimes referred as Open Up Policy as well, is the policy that People of Republic China executed since 1978. It allows foreign investment and international trading in China. More information: http://news.bbc.co.uk/2/shared/spl/hi/asia_pac/02/china_party_congress/china_ruling_party/key_people_events/html/open_door_policy.stm

² Jie Jiang, "Decline of Engel's Coefficient Records China's Rise - People's Daily Online," *People's Daily Online*, January 8, 2019, <http://en.people.cn/n3/2019/0108/c90000-9535740.html>.

³ Fengying Zhai et al., "Dynamics of the Chinese Diet and the Role of Urbanicity, 1991–2011," *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity* 15, no. 1 (January 2014), <https://doi.org/10.1111/obr.12124>.

within the time span of 4 years from 2006 to 2010, compared to the minimal increase of 1.4% from 1981 to 1985.⁴ Based on the data above, the topic of Chinese child and adolescent obesity (CAO) requires more research and discussion. Why has Chinese CAO grown at such a fast speed? Are there any similarities and differences between Chinese CAO and CAO that happens in other places?

2. Literature Review

It is important to mention that the causes of Chinese CAO share the similar fundamental issues with CAO that takes place in other countries. In the field of research on CAO in general, scholars agree that parents employed full-time would have a higher chance to have their kid obese/overweight.⁵ While parents are spending more time at work, children and adolescents tend to maintain unhealthy lifestyles and eating habits due to lack of parental care, which ultimately lead to overweight and obesity. On the other hand, Chinese CAO has its own uniqueness due to unique historical government policies, shifts in family unit, and national actions.

2.1 Historical Government Policies

The Open-Door Policy and One Child policy played a big role in changing Chinese daily life. Given the “Open Up Policy” that took place in 1977, China accelerated the urbanization and actively participated in globalization. There is no doubt that living conditions of Chinese residents are getting better due to the nation’s economic development in the last four decades.

⁴ Shu Wang et al., “Trends in Overweight and Obesity among Chinese Children of 7-18 Years Old during 1985-2014,” *Zhonghua Yu Fang Yi Xue Za Zhi [Chinese Journal of Preventive Medicine]* 51, no. 4 (April 2017). 304, <https://doi.org/10.3760/cma.j.issn.0253-9624.2017.04.005>.

⁵ Patricia Anderson, Kristin Butcher, Phillip Levine. Maternal Employment and Overweight Children. *Journal of Health Economics*. 22, no. 3 (May 2003), 478. DOI: 10.1016/s0167-6296(03)00022-5.

On the one hand, the Open-Door Policy accelerated urbanization from city to countryside, brought economic growth and raised individual wealth for Chinese people. Based on the implementation of the Open-Door Policy, China changed its income distribution system from a planned distribution system to an initial distribution system based on the market, which is a distribution system based on work.⁶ In rural areas, the so-called “family joint production contract responsibility system” (家庭承包责任制) changed the dynamic of old rural income distribution, which depended on production teams, not the farmers. This distribution method has greatly mobilized the enthusiasm and creativity of farmers, and the income, consumption and living standards of famers have therefore been improved to a certain level. According to the National Bureau of Statistics, compared to the per capita disposable income of residents nationwide was only 49.7 yuan in 1949, the number jumped to 28,228 yuan, with a nominal increase of 566.6 times and a real increase of 59.2 times after deducting price factors.⁷

On the other hand, the implementation of the One-Child Policy in 1977 drastically changed Chinese family structures as familial pressures were relieved from raising multiple children. Instead, there was only a need to direct all their financial resources to their one child.

⁶ Zhang Liang, “Gaige kaifang 40 nian zhongguo shouru fenpei zhidu gaige huigu ji zhanwan” 改革开放 40 年中国收入分配制度改革回顾及展望--理论-人民网 [The history and future of Chinese Income Distribution System in 40 Years after the Economic Reform], *People's Web* 人民网, published on January 19, 2019. accessed March 26, 2020, <http://theory.people.com.cn/n1/2019/0117/c40531-30560974.html>.

⁷ Qiu Haifeng. “Gumin 'Qianbao' Qishinian Gu Qilai jin Liushibei Shouru Laiyuan Gengjia Duoyua” 居民‘钱包’七十年鼓起来近六十倍 收入来源更加多元 [Residents’ ‘wallets’ swelled nearly sixty times in seventy years, with more diverse sources of income], *Xinhua Net* 新华网, published on August 15 2019. accessed March 26, 2020, http://www.xinhuanet.com/fortune/2019-08/15/c_1210242431.htm.

Along with this, obesity has occurred more often in a family that has an only child compared to families with multiple children.⁸

2.2 Social Change

According to the research, Chinese parents' social class, income, education is not as important as the elements that would cause CAO in other countries.⁹ Kids from any social class can be exposed to the chance of being obese or overweight in contemporary China. Secondly, the increase in overweight population also undermines that the changes in lifestyle and culture codes was so through in Chinese society that affect everyone from top to bottom. According to the research about how grandparents view adolescents' obesity and being overweight, scholars found out that grandparents had poor recognition of CAO and the health consequences of overeating. Grandparents were usually over-protective of their grandchildren on the topic of CAO, which made it harder for parents and teachers to improve their children's health conditions.¹⁰ This raises the questions about the perceptions that Chinese general public obtain towards overweight and obesity. Would different perceptions from different social position and class result in the increase obesity epidemic of Chinese adolescents?

Furthermore, the culture code of diet and nutrition preference was one of the most important changes that took place within the time period. According to the report that was

⁸ Ziwen Peng et al., "Imbalance in Obesity and Mental Health among 'Little Emperors' in China," *PLoS ONE* 14, no. 4 (April 2019), 12. <https://doi.org/10.1371/journal.pone.0207129>.

⁹ Yi Li and Zachary Zimmer, "Child and Adolescent Obesity and Employment Sector in Urban China," *Asian Population Studies* 9, no. 3 (November 2013), 270, <https://doi.org/10.1080/17441730.2013.807597>.

¹⁰ Bai Li, Peymané Adab, and Kar Keung Cheng, "The Role of Grandparents in Childhood Obesity in China - Evidence from a Mixed Methods Study," *International Journal of Behavioral Nutrition and Physical Activity* 12, no. 1 (June 2015), 91, <https://doi.org/10.1186/s12966-015-0251-z>.

released in 2007 by Chinese Association for Student Nutrition & Health Promotion (CASN&HP) and Chinese Center for Disease Control and Prevention (CDC), the higher household income of a family, the more intake of animal foods, milk and fruit for children and adolescents. On the contrary, the higher household income that a family receives, the less grain products the adolescents in the family would consume. Energy and major nutrient intakes would increase in families with higher household incomes.¹¹ The research uncovers that the elder generation share a preference of being overweight and providing high energy food to their grandchildren.¹² Therefore, CAO would be seen as good sign of having the access to food, rather than a health risk to the general Chinese population.

2.3 Tremendous Stress to Study

Besides the stereotype of being obese and overweight that previous generations have, adolescents are also facing obstacles to maintain good health. For Chinese adolescents, the main source of pressure comes from the Senior High School Entrance Exam (SHSEE). After graduating from middle school (around the age of 15), students wishing to continue their study in the general (academic) track must pass the entrance examinations for general senior secondary schools, which is also known as *zhongkao* (中考) in China.¹³ Moreover, due to urbanization, education is centralized in cities, rather than scattered evenly in both urban and rural areas. It raises more stress in terms of competition of adolescents in their path of attaining higher

¹¹ Chen Xin 陈新, "Zhongguo ertong yingyang zhuangkuang lanpishu fabu" 中国儿童营养状况蓝皮书发布 [The Released of the Blue Book of Chinese Children's Nutrition Status], *Chinese Journal of Reproductive Health* 中国生育健康杂志 18, no. 4 (2007), 228.

¹² Ibid.

¹³ "China Education System," accessed April 14, 2020, <https://www.scholaro.com/pro/countries/china/education-system>.

education. Taking Hefei, which is the capital city in Anhui Province, as an example, there were nearly 67,000 students who participated in the senior high school entrance examination in 2017. Only 20,000 students would get into senior high school, which is only 31% of the total participants; among these 20,000, only 15,000 would get in to a top-tier senior high school. This proportion of admissions happen every year. It is not hard to imagine how study-induced stress would be a big life problem that every adolescent would need to face.

Due to adolescents being under huge pressure in chasing higher scores in examinations, students usually dedicate the majority of their time studying in front of a desk rather than having outdoor exercises. According to the survey, “Main Reasons of Kids Not Having Good Physical Health Regarded by Parents” that took place in August 2019, among 2014 parents, 73.6% of them thinks that lack of exercise is the main reason that students are becoming overweight.¹⁴ Under this circumstance, even though parents might understand the reason why their children are overweight, it is clear that the response from parents regarding the obesity epidemic might be limited: on the one hand, parents feel pity that their children need to study so hard every day, but on the other hand, it is hard for parents to look for more exercise for their children based on their busy schedules.

2.4 Current Resolutions to Address the Obesity Epidemic

2.4.1 National Actions

In order to solve these problems, the Chinese government has taken actions that aimed at improving student health by including a Physical Education (PE) Test as an essential part of the

¹⁴ “China: Reasons of Kids Not Having Good Physical Health Regarded by Parents 2019,” Statista, accessed December 7, 2019, <https://www-statista-com.eu1.proxy.openathens.net/statistics/1049869/china-reasons-of-kids-not-having-good-physical-health-regarded-by-parents/>.

SHSEE. The PE test differs from province to province, including various activities such as 50-meter running, standing long jump, rope skipping, and basketball dribbling. The PE test specifically targets to test the student's physical ability such as speed, strength, endurance and agility.¹⁵

2.4.2 Parental Action

On the other hand, parents have their own approaches to address their kids obesity/overweight problem: changing diet and doing more exercise. Given the fact that adolescents dedicate the majority of their time into schoolwork and studying, parents have limited choices to improve their kids' health conditions. Changing their children's diets is the most common choice for parents. According to research, 63% of parents choose to change their kids' diet habits and lifestyle in order to keep them fit rather than have more exercise.¹⁶ In addition, parents are also trying to fit exercise into their child's busy studying schedules. Parents usually enroll their children different afterschool courses that specifically focus on a type of sport, such as tennis, badminton, and other competitive sports; or, they will send their children into different sports camp or weight loss camp during spring break or summer break in order to drastically improve their children's physical abilities in a short time period.

However, Chinese parents are different from western parents when it comes to increasing exercise volume in their children's daily routines. First of all, Chinese parents do not recognize

¹⁵ Ibid.

¹⁶ “Jiazhangbang: zhongguo jiating haizi shenti suzhi peiyang dongcha (fuxiazai) 家长帮：中国家庭孩子身体素质培养洞察（附下载） [Parents Group: Insights into the Cultivation of Children's Physical Fitness in Chinese Families],” published on Chinese Internet data research center 中文互联网数据研究资讯中心-199IT, accessed April 19, 2020, <http://www.199it.com/archives/935462.html>.

exercise as the most important tool when it comes to improving their kid's physical abilities. Based on research, Chinese families were not used to making sports and exercise common family activities.¹⁷ On the one hand, the average weekly exercise duration of Chinese parents is only 2.5 hours, and more than 60% of parents exercised with their children no more than once a week. On the other hand, 66.8% of parents adopted a loose education method for the training of children's exercise habits, which mainly focuses on children's interests and not be forcing them to persist in the sport. Under this circumstance, 67.7% of adolescents do not exercise more than twice a week.¹⁸ Secondly, parents seem more concerned about improving sociability for their kids when choosing the sport that their kids practice. When the kid is was in primary school or kindergarten, they tend to choose table tennis, basketball and other sports that have more human interactions and focus on improving physical fitness. As soon as their kids become teenagers, parents pay more attention to the relevance of sports and further education, study abroad, and career development. As time goes by, the sport that parents choose shows a transition from comprehensive physical fitness to a specific sport. When the kid is in middle school, parents would use a utilitarian stand point and choose the exercise that would benefit their PE test scores in SHSEE. Therefore, the lack of recognition of the importance of sport and the limited time constraint result in parental demand for their kids to have quick success in improving physical performance. The demand is so strong that it has even created a fitness bootcamp industry that specifically targets adolescents. Those bootcamps are mainly held in summer and spring breaks. They usually give the assurance that the members of their bootcamp will lose a large amount of

¹⁷ Ibid., 1.

¹⁸ Ibid., 2.

weight scientifically or improve members' physical performance to a certain level in a short time period.¹⁹

2.5 Research Gap

As previously described, existing research and projects are focused more towards the lens of the policymakers, medical specialists, and data-driven facts. On the contrary, this research attempts to fill in the gap with the perceptions and experiences of Chinese overweight adolescents as well as people who work in the weight-loss industry. Specifically, this research asks the following questions: What is the social rationale behind the Chinese obesity in urban areas? What are the perceptions of current resolutions to address the obesity epidemic among Chinese adolescents, their parents, and other stakeholders?

3. Methodology

To dive into the reasons behind Chinese adolescents' obesity, I relied on qualitative research. I conducted one-on-one interviews, including: one individual who used to be obese adolescent and went to bootcamp; one PE trainer who was famous for training adolescents to pass the PE test in high school admission in Hefei, Anhui Province; a nutritional therapist, who was specifically working with child and adolescents; and a mother who was trying to improve her 14-year-old son's health.

The first interview benefits my research with insights of what life would be as an obese adolescent in China. The second interview provides me with first-hand information of the challenges that parents and children are facing when they deal with the problems of obesity. The third interview helps me paint the overall picture of the paradoxes and myths that parents or

¹⁹ Xiaoyun Li, X. Zhou, and Therese Hesketh, "Experiences and Perspectives of Children Attending a Weight Loss Camp in China: A Qualitative Study," *Child: Care, Health and Development* 42, no. 5 (2016): 644–51, <https://doi.org/10.1111/cch.12353>.

grandparents have during parenting obese adolescents. The last interview helps me get a glance into an adolescent's daily life and obstacles. My full interview questions can be found in Appendices 1-4. All of my interview took place under the agreement that I would not mention the real name and personal information of any interviewee and that the content that I mentioned in this research would be only used for academic purposes.

Due to COVID-19, the current situation did not allow me to conduct the survey that I intended to do. Nevertheless, I hope the interviews still help me to underline the social rationale behind the obesity epidemic among Chinese adolescents. In doing so, I attempt to analyze the social change that has taken place due to the Open-Door Policy and One Child Policy from both primary and secondary sources to better understand the context. I also use secondary sources to show the impact of the change in both nutrition sources and consumer insights contributing to the growth of obese Chinese adolescents, while corroborating this with my qualitative results.

3.1 The Experience of being an Overweight/ Obese Chinese Adolescent

In order to understand the real struggle of being an overweight/obese Chinese adolescent, I set up an interview with a 21-year-old college student, who would like to use the pseudonym Thomas Liu. Thomas Liu is from Shenzhen, which is a top-tier city in China. He was identified as being overweight since being 10 years old and was diagnosed as being obese at the age of 16. This interview identified the root problem of Chinese CAO.

Thomas Liu concluded the reason of being overweight at the age of 10 was his being spoiled by grandparents with respects to eating and snacking. He was in the normal weight range at the beginning of primary school. Due to high real estate price in Shenzhen and busy working lifestyle, his parents had no choice but to live together with his grandparents. During primary school, he would have his three meals all at home, which were all cooked by his grandfather. He

would have one meat dish and three vegetable dishes for both lunch and dinner on an ordinary day. However, his consumption of rice increased as he became older in primary school. He gradually increased his rice (carbohydrate) intake from one bowl of rice to two bowls of rice.

Besides preparing the daily meal, his grandfather was also in charge of picking him up from school every day during primary school. His grandfather usually did grocery shopping for dinner before or after Thomas got off class. Thomas indicated that he was always looking forward to his grandfather taking him to grocery shopping, because Thomas would get the chance to ask for whatever he wanted him to eat in dinner or got a bottle of Coke. Thomas's grandfather usually fulfilled his request of either a meat or seafood dish for dinner or buying him a soda drink. Thomas remembers that his parents have restrictions at home for soda and candy, so he would consume the soda before entering the house. Thomas admitted that he would have soda at least three times a week. So, at the age of 10, he was already 35 kg.

Even though Thomas and his grandparents did not consider himself as overweight, his parents started to be concerned about his weight. However, their intuition was not much concerning his health, but more about his performance on physical education (PE) test that would take place during his High School Entrance Examination (HSEE) when he graduated from middle school. After graduating from primary school, Thomas went to a middle school that was far away. He could no longer had all three meals at home. On an ordinary school day, he would eat outside for breakfast and lunch at school, and only have his dinner at home. His parents would provide pocket money to him to make sure that he had enough to spend. However, his diet habit was not healthy at all. Thomas described that his breakfast was usually fried fast food from street trucks. The school lunch was mainly oily carbohydrates with low nutrition because his school wanted to cut costs. His family knew that and wanted to compensate him with better food

during dinner time. There would be four meat or seafood dishes and two dishes of vegetables waiting for him every evening. His rice intake also increased to three bowls of rice. On top of all the high-calorie food, he would also spend his pocket money for a soda drink and jelly snacks every day. His weight quickly increased to 45 kg in the first summer of middle school.

His parents were really concerned about his weight. So, they sent him to a weight loss camp in Shenzhen six months before his PE test for HSEE. Thomas did not take his weight problem as seriously as his parents. He knew he weighed more than other people in the class, but he did not see any problems with that. However, his parents insisted he enter a weight loss camp during summer break. He described the weight loss camp as a nightmare that he never wanted to go back to. In the camp, he would start working out from 9:00am till 12:00pm and took a two-hour lunch break and went back to the intense training until 5:00pm. The weight loss camp advertised to push the students to their limits. As soon as he got back home, he can only stay awake one hour for dinner and became so exhausted he wanted to go to bed. He described the bootcamp as being so brutal that he felt fear and hesitation about going back to the gym. However, his parents were glad to find out that he lost 20 kg within 75 days and got a full score on the PE test for his HSEE. Unfortunately, he gained all the weight back in the beginning of high school.

3.2 The Power of National Action on Adolescents Overweight and Obesity

For provide further information about how national action (the PE Test for SHSEE) affects adolescent's lifestyle and health, I decided to interview Ken Wu. Ken Wu is an orthopedic doctor who specializes in athletic sports rehabilitation. He has been an expert in the field for over 20 years. Recently, he started consulting adolescents on improving their

performance in the HSEE PE test upon friends' requests from 2016. I wanted to dive deeper on how government and the parents deal with this problem using the insight of a PE trainer.

Targeting SHSEE's PE test, which happens in April every year, Ken accepts 10 to 20 adolescents in December or January one year prior to when the test happens. His clients would meet him three to four times a week depending on their school schedule. The appointment usually happens at night from 7:00 pm to 9:00 pm. As an orthopedic doctor, he has helped adolescents improve their PE scores by correcting their posture in daily life and during exercise. Ken mentions that long periods of studying and incorrect parental guidance are the main causes of students' incorrect posture. Incorrect posture would reduce adolescent's mobility, speed and eventually affect their PE test scores. After training with him, all of his clients would/should see improvement in PE test scores. On a grade scale with the maximum of 60, among all the clients he has trained, the lowest score that his client has ever received was a 51.

Ken indicated that every year 40% to 50% of his clients are overweight. He identified the majority of the students he met are overweight due to stress and did not have time to exercise. On the other hand, parents wanted to compensate their kids with good food. He believes that most overweight clients that he saw were actually malnourished. He thinks that the PE test requirement set by Education Bureau cannot fully reflect the physical ability of adolescents. However, these requirements would stimulate adolescents to increase daily exercise in a way that would benefit their physical abilities.

At the end of the interview, Ken said he was glad that the Anhui Bureau of Education is taking more awareness toward PE test, that they gradually increase the score proportion of the PE test in senior high school entrance examination every year. When he first accepted adolescent clients in 2016, the maximum score for the PE test was 50, which occupied 6% of the whole

score for SHSEE. Now, the maximum PE test score jumped to 60, which is 7.5% of the whole score for SHSEE. Moreover, he noticed that more and more colleges had put PE Test score as requirement for graduation, such as Central China Normal University (华中师范大学) and Hebei Normal University (河北师范大学).

3.3 An interview of a mother who have a overweight adolescent

After interviewing Ken Wu, I start to question what the life of adolescents is really looked like nowadays. I felt that the interview with Thomas Liu could not fully answer my questions, since he was born in the late 90s. Considering the fast change dynamics in Chinese society, I wanted to take a closer look of the daily life and real struggle from an adolescent born after 2000. Fortunately, Amanda Yu, who is a mother of a 14-year-old overweight boy, accepted my interview.

Eric Hu, who is Amanda's son, was born in 2006. Given the fact that Amanda and Eric are living in a second-tier city with cheaper real estate prices, Amanda was able to live separately from both her own parents and parents-in-law. As an independent assertive female, Amanda did not like the idea to leave the job of parenting to the elder generation. Besides the first two months after Eric was born she did not require any help from Eric's grandparents at all. Amanda first noticed that Eric was starting to be overweight when he entered primary school. At that time, Eric was six years old and weigh 35 kg. According to the Chinese Child and Adolescent Overweight and Obese BMI Index Standard (中国学林儿童青少年超重和肥胖筛查体重指数, see Appendix 5), Eric would be considered overweight with a BMI of 17.8. Amanda said that Eric was eating way too much compared to the kids in the same age range. Eric could consume two bowls of rice and the whole family would finish three meat dishes per meal. She was really worried because she knew that not only her husband and his family, but also all the Eric's

cousins are overweight. Moreover, Eric's uncles all have familial hypertension, which made Amanda even more nervous about Eric's health condition.

With the fear of her son becoming obese, Amanda changed Eric's diet immediately. All of a sudden, she reduced her son's intake of rice per every meal to bowl of rice. Every morning, Eric would have a boiled egg, a bowl of porridge and a steam roll. Instead of three meat dishes like before, Eric would only see a meat dish appear at the lunch table once in two weeks, along with two vegetable dishes as a fixed menu. For dinner, Eric could only have one bowl of rice and some left-overs from lunch. Amanda claimed that she figured out Eric's new diet on her own. Even though she did not consult with any nutritional therapist, she was confident that this diet had enough nutrition and calories that would fulfill Eric's daily needs. However, she also mentioned that Eric's new diet was highly criticized by all their close relatives. They thought Eric was always suffering from hunger. However, Amanda insisted on Eric's diet and tried to ignore the criticisms as the best as she could over the years.

Another step that Amanda took was bring more exercise to Eric's schedule. During primary school, Amanda sent Eric to play table tennis and basketball twice a week based on Eric's interests. With all the effort, Eric was back to a normal BMI by age 11. However, Eric's health condition did not last for a long time. As soon as Eric got into middle school at the age of 12, he was too busy with schoolwork and could not keep up with table tennis and basketball training as usual. He needed to arrive at school at 7:10 a.m. everyday. Eric would have less than two hours for lunch break and needed to stay at school for 9 to 10 hours per day. He usually got back home at 7 p.m. His weekends were also occupied with afterschool courses that aimed at improving scores in math, Chinese, English and physics. Although school required Eric to run for 15 minutes and jump rope for 5 minutes every day after, Amanda still thought that Eric

lacked exercise. Now, Eric is 14 years old with a BMI of 24.93, which is considered as overweight (see Appendix 5 for a table for BMI calculations).

At end of the interview, Amanda told me that this summer she was going to send her son to a bootcamp to improve PE test scores in the SHSEE. Given the busy schedule that Eric has, she did not want to add more activities in Eric's daily schedule to make him overwhelmed. In addition, due to COVID-19, Eric had stay at home and could not go out for already four months. Amanda believed that the only way that Eric would perform well in his PE test for SHSEE is an intensive workout for two months and keep fit in the next eight months. She did not know what else she could do to help her son to get rid of weight problem.

3.4 The Myth and Paradox of Nutrition knowledge among Chinese Parents

To dive deeper into the subject, I set up an interview with William Liu, who is a nutritional therapist in Nanjing Children's Hospital. I wanted to get more information on the general misinformation and myths about obesity and being overweight that still exist in today's society.

William Liu concludes that there are four main reasons that cause Chinese adolescents to be overweight: infantile obesity, family diet habit, diseases during pregnancy and a high sugar intake diet. Firstly, according to his experience, an infant who was born overweight tends to keep being overweight when they grow up. Secondly, a mother who has diseases during pregnancy often gives birth to huge baby or baby with high blood sugar, which would lead to the baby being overweight and obese eventually. Moreover, overweight adolescents often appear in the families where the majority of members are also overweight and obese. Finally, most adolescents prefer high calories diet and sweet sugar beverages.

William also thinks there are four myths that parents have when they think about nutrition intakes for their kids. First, he admitted that most of his patients had an excessive intake of meat. Parents let their kid eat as much as they want without a limit. Secondly, parents feel that their children should eat more because they are growing up. Being overweight is justifiable during an adolescent's growth period. Eric is one of those examples; he is already overweight, but his relatives still want him to eat more. Thirdly, parents have low recognition of their kid being overweight or obese. William indicates that patients who come to see him due to being overweight or obese, are considerably low, compared to the patient volume a Western nutritional doctor would have. He said it was typical for most parents to not worry about their kid's weight until the kids have shown obesity complications, such as diabetes and hypertension. During my interview with Amanda, she always used phrases like, "I felt like he is fat" rather than referring to her son's BMI index. Finally, William believes that the lack of understanding of nutritional knowledge was a common pain point for the majority of Chinese parents. Like Amanda set up her son's diet on her own, most patients that William met felt it was hard to follow the regimen after the first diet consult. William said that most of parents refuse to come back to get an adjustment in diet after their kid is diagnosed with obesity complications. Parents have blind confidence about their nutritional knowledge when it comes to adolescents being overweight and obese.

4. Conclusion

The Open-Door Policy elevated the income level of Chinese urban families, accelerated urbanization and globalization, stimulating the competitiveness in the society. Due to higher competitiveness of the society, double income families became mainstream, which led to grandparents taking over parental care for adolescents born under the One-Child Policy. In the

meanwhile, the One-Child Policy eliminated the size of a family, which led to unitary asset flow in a family where an adolescent would receive assets from head-to-toe in three families (two families as grandparents and a family of parents) on average. Overabundance of cash flow usage towards adolescents has led to a huge pressure in studying, which created the need to participate in endless afterschool courses and infinite snaking due to misbehavior in using pocket money. Under these circumstances, adolescents born under the One-Child Policy have a higher likelihood of being exposed to the chance of being overweight and obese.

The qualitative research in this project corroborate this. My interviewees, Thomas Liu and Eric Hu, share similarities as well as differences in their teenage lives. Both of them considered performance well in the SHSEE as the biggest goal during their teenage years. Though coming from a good cause, the gradually increased PE test requirement put more pressure on them. On the one hand, they are both under pressure to perform well on the SHSEE PE test and treat it as the reason to exercise in a short time period rather than solving the health problem of being overweight in a long run. Both of them have problematic diets due to either their parents' or grandparents' lack of nutritional knowledge. On the other hand, Thomas's lifestyle and diet habits were largely affected by his grandparents due to financial restrictions from growing up with higher living expense. Eric was able to escape from the reach of the grandparents but could not get rid of his mother's unscientific diet. Moreover, both family accept the sudden change that would take place in their children's physical abilities and weight loss with an intensive work out bootcamp, rather than investing more time in building their body shape and improving health conditions. It is important to realize that the four interviews in this research would not cover the whole picture of this epidemic.

Based on my research, Chinese adolescent obesity seems to be mainly affected by the consequence of social change, urbanization, lack of nutritional education. On the other hand, the resolution of the adolescent obesity epidemic was limited due to adolescents suffering from huge study pressure for higher education, as well as parents ignore the importance of sports and proper nutritional knowledge. Hence, more research will be needed to be done in order to solve the problem of Chinese CAO. I hope that there will be mandatory nutritional education for parents and children, less study stress for students, and higher volume of exercise for them per week.

Appendix 1: Interview Guide for Thomas Liu

1. Brief self-introduction.
2. How long have you been overweight?
3. When did you feel you started being overweight?
4. Describe your daily routine in Primary school and Middle school
5. Describe your daily meal in both primary school and middle school
6. Why do you think you are overweight in primary school/ middle school?
7. Have your parents ever taken actions to control your weight?
8. Did your school take any action in improving student PE Test scores for SHSEE?
9. What do you think about weight loss bootcamp? Do you like it? Why?

Appendix 2: Interview Guide for Ken Wu

1. Brief self-introduction.
2. How long have you been training adolescents for improving their PS test score in SHSEE?
3. What do you offer during your training?
4. How could you improve their PE Test scores?
5. What result would your client expect after training with you?
6. Would you mind describe the characteristics of your client group on average level?
7. How many percentages of your clients are overweight?
8. Please describe what would happen in one session of your training.
9. What is your opinion on PE test in SHSEE? Do you think it is effective and efficient?
10. What do you think about the PE test requirement slowing increasing every year?

Appendix 3: Interview Guide for Amanda Yu

1. Brief self-introduction and description of your son, Eric Hu.
2. How old is Eric?
3. When you start to realize that Eric is overweight?
4. Please describe the Eric's diet habits when he was six years old.
5. Please describe the new diet habits that Eric adapted.
6. What did you do to trying to get his weight under control?
7. When did he start to exercise frequently? And when did he stop? Why?
8. Please describe the daily life of Eric on a ordinary school day.
9. What do you think about Eric's health conditions now?
10. What kind of activity you would like Eric to do to improve his health conditions?
11. Why would you want Eric to participate in intense training program?

Appendix 4: Interview Guide for William Liu

1. Brief self-introduction.
2. How long you have been a nutritional doctor?
3. Have you ever met patients who were overweight or obese? How many were they?
4. Based on your experience, why do you think there are more and more Chinese adolescents are overweight?
5. Based on your experience, what kinds of common myth that parents would have when they are taking care of their adolescents?

Appendix 5. Chinese Child and Adolescent Overweight and Obese BMI Index Standard (中国学龄儿童青少年超重和肥胖筛查体重指数)

表 3-5 中国学龄儿童青少年超重和肥胖筛查体重指数 (BMI) 值分类标准 (kg/m²)

年龄 (岁)	男		女	
	超重	肥胖	超重	肥胖
7	17.4	19.2	17.2	18.9
8	18.1	20.3	18.1	19.9
9	18.9	21.4	19.0	21.0
10	19.6	22.5	20.0	22.1
11	20.3	23.6	21.1	23.3
12	21.0	24.7	21.9	24.5
13	21.9	25.7	22.6	25.6
14	22.6	26.4	23.0	26.3
15	23.1	26.9	23.4	26.9
16	23.5	27.4	23.7	27.4
17	23.8	27.8	23.8	27.7
18*	24.0	28.0	24.0	28.0

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