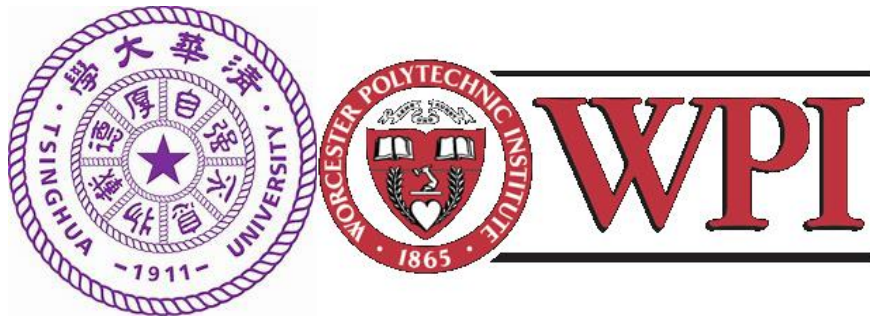


# **Campus Safety and Student Activities During Pandemic and Its Impact on Future Campus Life**

**By**

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Campus Safety and Student Activities During Pandemic and Its Impact on Future  
Campus Life

An Interactive Qualifying Project  
Submitted to the Faculty of  
WORCESTER POLYTECHNIC INSTITUTE  
in partial fulfillment of the requirements for the  
degree of Bachelor of Science

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## Abstract

In 2019, a contagious virus named COVID-19 appeared on individuals' sights. It had caused numerous difficulties around the globe and killed countless lives. Specifically, education was greatly affected, and campus safety was threatened. This project aimed to assist colleges to improve students' and faculty member's campus life. To achieve this goal, we adapted one survey and three interviews to further investigate. The survey and interview results show that students still need some psychological counseling to improve their mental health. Therefore, we believe that schools should improve the mental health of students through consultation and other measures.



## 1. Introduction

COVID-19, a severe acute respiratory syndrome-related (SARS) coronaviruses (Coronaviruses Study Group of the International Committee on Taxonomy of Viruses, 2020, p. 541), was initially reported in Wuhan, China in December 2019. Wuhan was shut down to minimize the damage. However, the rest of the world did not consider this as much of a threat initially. Later, as the world was facing a vast difficulty caused by this virus, China put the spread of the COVID-19 under control. At the beginning of this epidemic, the Chinese government and people were in chaos (BBC News Chinese, 2020). According to statistics from Johns Hopkins University, there were approximately 101,901 people infected with COVID-19 in China, which caused approximately 4,800 deaths. The impact on China has surpassed the SARS virus. However, the government reacted immediately and notified its citizens about the seriousness of this virus. Schools and universities across the country shut down and embraced online learning. After that, the central government posted some beneficial policies for preventing the spread of COVID-19, such as keeping social distance, wearing masks, and stopping traveling to other cities (AITakarli, 2020). Many communities, government agencies, and private organizations implemented their policies about preventing people from getting infected by COVID-19.

Our sponsor, Tsinghua University, was in the northwestern suburbs of Beijing (Tsinghua University, n.d.-a). During the interview with the sponsor, we were able to gain information on the practices used during COVID at the Tsinghua University and how they reacted or contained the outbreak to maintain student safety. As Tsinghua was in a suburban area, there were not many infection cases. Although it was relatively safe in Tsinghua University, the campus safety department in Tsinghua still did everything they could to protect their students and faculty. For example, similarly to other colleges and universities in China, almost every university was guarded by walls around the school to keep the students and faculty safe. Students usually left from the front gate. Top universities like Tsinghua University strictly control who could enter the campus, especially during the pandemic. Students and faculty must swipe their student/faculty card at the gate to enter the campus, making the flow of traffic documented consistently. All guests who wanted to visit the campus had to go on Tsinghua University's campus website to be

registered for a campus tour seven days before the visit. When tourists arrived at the campus gate, they were required to show their ID to the security guard to ensure they were pre-registered for the tour (Campus Visit – Tsinghua University, n.d.). Tsinghua University utilized this policy during the pandemic.

Since students and faculty need to swipe their cards to enter or leave their campus, the universities' system records people who leave or return to the campus. When there were infection cases on the campus, Tsinghua knew which students/faculty had left the campus and required them to be quarantined and received a COVID-19 test. Tsinghua also asked students to fill out a form on their website to request to leave or enter the campus. Additionally, Tsinghua University prepared enough medical supplies and created a network with sub-district offices, relevant government units, communities, and hospitals (Izumi et al., 2021). Tsinghua did a great job of preventing COVID-19 infections. However, according to our sponsor, mental health services needed to be scaled up. Although there was mental health consultation provided in the school, the number of consultants was limited on the campus and even limited in the Beijing area.

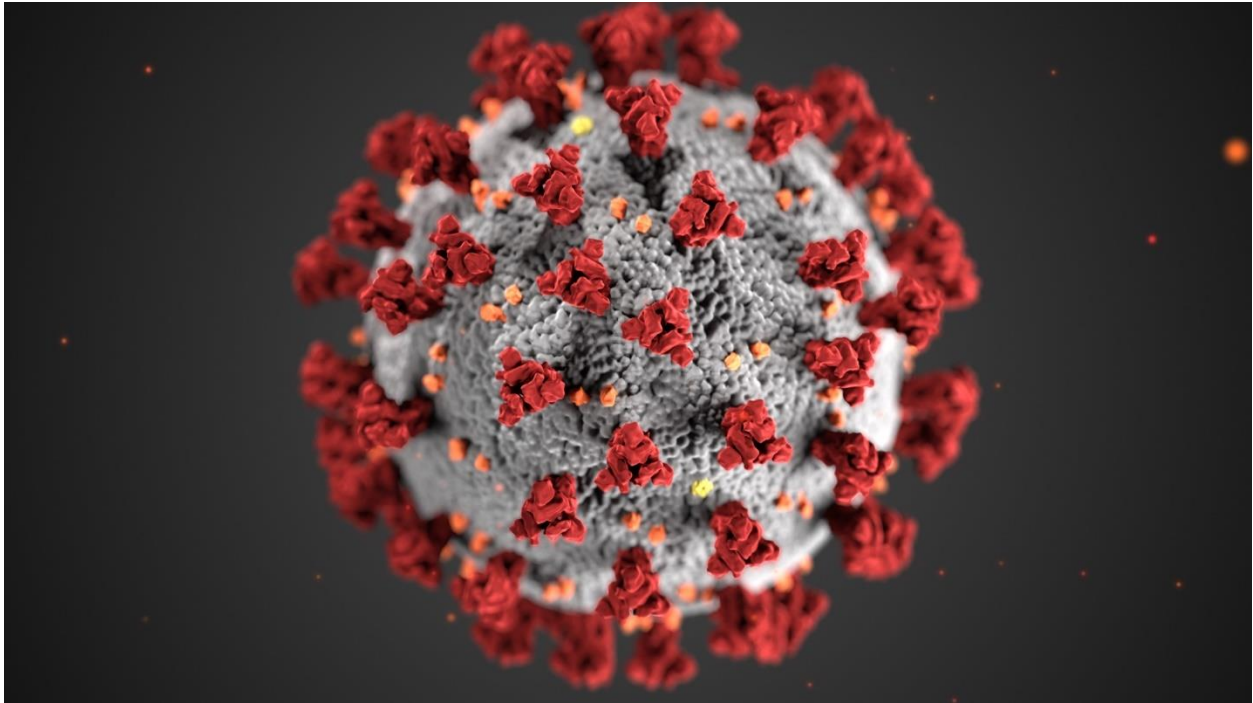
Universities have faced unique challenges during the pandemic. One challenge has been the time-consuming registration systems that students/faculty use before entering or leaving campuses. Students and faculty need to go through a long process of providing the reason for leaving, time of leaving, and health codes. It can take a while for students/faculty to receive approval to enter/leave campuses. A second challenge is the shortage of mental health consultations. Many individuals can encounter mental distress during quarantines and the shortage of consultation can cause issues such as the worsening of students'/faculty member's mental health.

This project aims to resolve these and other challenges faced by universities. This project aimed to investigate an easy-to-understand, money-saving, and efficient plan to help students and faculty improve their campus life during the pandemic. At the same time, our resolution helped to raise their awareness of COVID-19 to prevent future infection cases and helped students and faculty resolve possible mental distress. This report contains six chapters. The introduction chapter summarizes the purpose of this project. The Background chapter provides underlying information that is vital to the project. The Methodology chapter explains the objectives and

research methods used to achieve the objectives. We have conducted one survey and three interviews. The Conclusion chapter reveals the findings we concluded from the research. The Recommendation chapter shows the proposal we suggested for our sponsor.

## 2. Background

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), also known as COVID-19, was first reported in 2019. SARS-CoV-2 stems from the Coronaviruses family (Asselah et al., 2021, p. 170). SARS-CoV can infect a wide range of vertebrates such as birds, bats, frogs, and humans. COVID-19 is zoonotic, which means it infects humans and animals with this virus and was first carried by animals then transmitted to humans (Asselah et al., 2021, p. 170).



*Figure 1: Coronavirus Illustration Done by FDA (Center for Food Safety and Applied Nutrition, 2021)*

As of April 7, 2021, there had been 133,590,473 COVID-19 cases and 2,896,434 death cases reported (Worldometer, n.d.). Different COVID-19 patients exhibit different symptoms, which makes COVID-19 harder to diagnose. In January 2020, the World Health Organization (WHO) summarized the symptoms of COVID-19 based on the cases they had on file. The most common symptoms are fever, dry cough, and tiredness. Less common symptoms include aches and pains, sore throats, diarrhea, conjunctivitis, headache, loss of taste or smell, and rashes (or discoloration of fingers or toes). It was evident that many of these symptoms also occurred with common colds and influenza, so it was hard to tell whether COVID-19 infected a person without a test. However, some severe symptoms could help to differentiate, for example, difficulty in breathing or shortness of breath, chest pain or pressure, and loss of speech or movement (World

Health Organization, 2020). Severe symptoms and the death rate of COVID-19 made it crucial to protect students' and faculties' safety.

## 2.1. Prevention and Control in Chinese University During the Outbreak of COVID-19

Due to the outbreak of COVID-19 in China, most Chinese schools had to lock down since the Chinese government had posted policies about preventing the spread of COVID-19 among students. Since there were numerous students in the school and most of them were teenagers, schools could not risk their health to open campuses. Instead, many schools began to use online teaching instead of in-person courses. China has a fast-growing online education environment. More than 130,000 online education companies have emerged in the past five years, and in 2019, more than 60,000 online education-related companies were created (Cen, 2020). Schools asked all the students to go back home before the deadline of operating the travel ban in China. For international students who were stuck in Wuhan, China, and could not go back to their country, the Chinese government provided safe places to live and asked them not to go out to the street unless it was essential (Joles, 2020). Since the reduction of the COVID cases, China decided to reopen all the schools after April 8th, 2020. To protect students from getting diseases, the government and schools provided some suggestions and policies for students. Teachers, students, and other faculty who worked inside the school were required to be COVID tested before returning to campus. The government required masks in classrooms or other places on the campus. Teachers had a responsibility to check fever, report, and isolate potential risky or sick students. Schools provided teachers with an adequate number of thermometers and record forms to measure the temperature of students in advance to prevent and detect sick students. Schools asked teachers to separate the seats for students to lower the threat of infection and reduced group activities on the campus, such as cancelled school ceremonies and all the club activities to keep social distance between students (Hernández, 2020). Tsinghua University took similar prevention and control measures during the pandemic. According to our project sponsor, Tsinghua University has made it clear that the school canteens do not provide dinner service during the outbreak. During other hours, each table could only sit one student. Since the low infection rate and high concentration of protection, the Chinese schools reopened, and nearly 200 million students were back to school after the government posted the reopening plan.



*Figure 2: Students Returning to Campus During Post-COVID Campus Life (Lau, 2021)*

## 2.2. Hidden Danger in Chinese Student Dormitories and Strategies Taken by Other Schools

Unlike college dormitories in the United States, many Chinese college dormitories usually house four to eight students per unit. Chinese “default” dormitories are usually characterized as small and confined. Some dorm rooms had a balcony for students to hang their wet clothes and some dorm rooms only had 1 to 2 windows. When students do not open their windows to allow airflow, it can result in dampness and other sanitary problems. In addition to such high occupancy and small space, most university dormitories used shared bathrooms on every floor to gather quickly. Under these conditions, respiratory diseases such as COVID-19 could spread like wildfire. Such dormitories often had the most infection cases in winter. According to research, the median ventilation rate in winter was 4.10 L/s per person at night and 10.7 L/s in summer. According to the research, there was a significant correlation between ventilation rate at night and respiratory diseases in summer and winter (Yang et al., 2021a, p. 145983). Tsinghua University required its students to try their best to keep the dormitory windows open when there were no exceptional circumstances to create a circulating air channel. In addition, to prevent the virus from being brought into the dormitory by strangers or students who were not in the dormitory, Tsinghua University strictly controlled off-campus personnel.

Returning students were required to check their temperature with dormitory administrators before entering the dormitory.

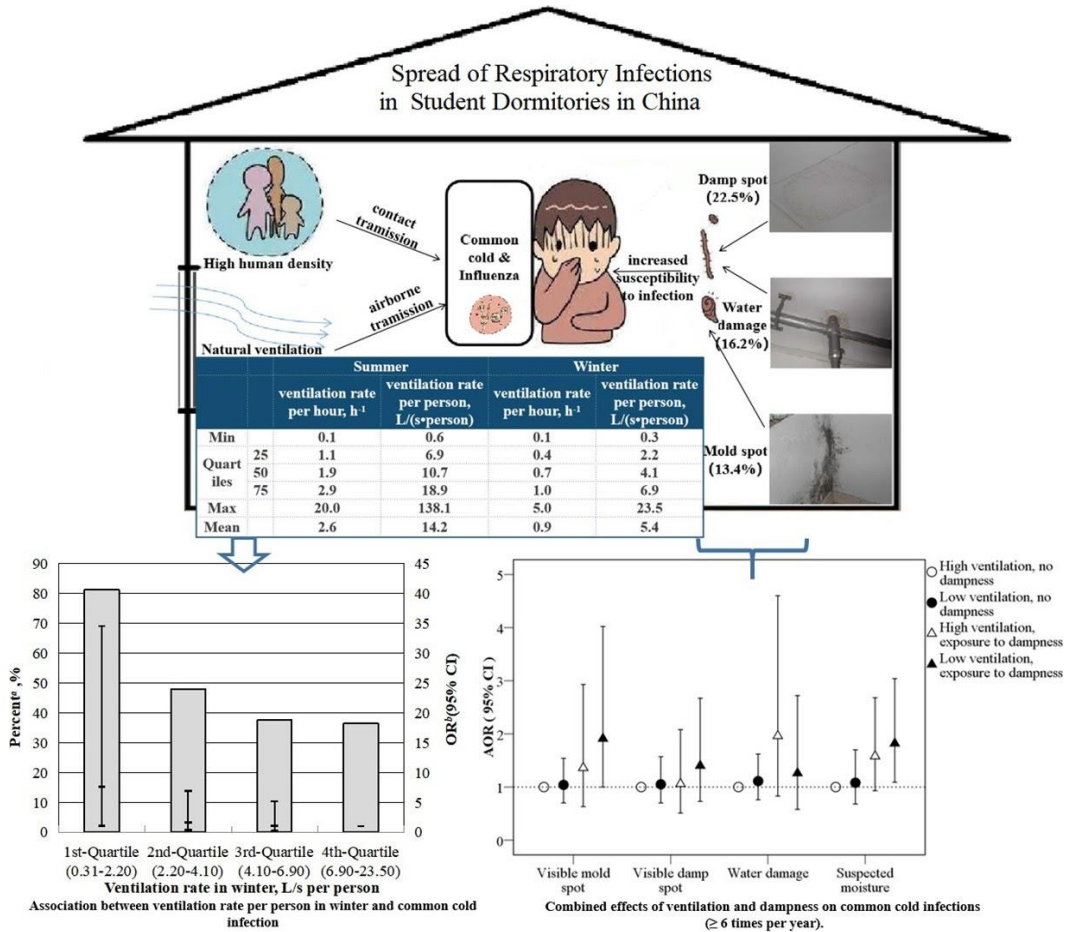


Figure 3: Spread of Respiratory Infections in Student Dormitories in China (Yang et al., 2021b)

The high occupancy of a Chinese student dormitory could lead to a high infection rate. To provide students a better campus life environment, suitable and effective control and preventative measures were needed. Other schools around the world executed plans to resolve the high occupancy issue. For instance, Worcester Polytechnic Institute (WPI) adjusted its housing plan because of the global pandemic. WPI's adjusted housing plan aimed to provide students a living environment that allowed students to practice social distancing and enjoy an engaging student life experience. Students were mainly put into double rooms. If any students preferred to live in a group of three, they could select from resident halls with larger room spaces (WPI, n.d.).

### 2.3. Challenges During Quarantine: Student's Mental Health

Immediately after the outbreak of COVID-19, the Chinese government required mandatory home quarantine and released policies related to school COVID-19 prevent and control measures. These requirements posed a great danger to the mental health of students being quarantined at home. According to the literature, students reported an increase in traumatic stress, depression, and anxiety (Tang et al., 2020, p. 2). These mental health issues occurred due to the following two stages: the resting-at-home stage when the school was closed, and the closed management stage after the students returned to the campus.

The first stage is when the epidemic emerged and increased in infection rates from the beginning of 2020 to June 2020. A study showed that during home quarantine, the appearance of post-traumatic stress disorder (PTSD), a mental health condition triggered by a traumatic event (Mayo Clinic, 2018), and depression was found to be 21.5% and 16.6% (Dr.X 2020). The feeling of extreme fear was noted as one of the significant risk factors of psychological pressure (Tang et al., 2020, p. 2).

The second stage was after August, which is after the summer vacation in China. During the second stage, the number of infection cases decreased, but the number of student mental health issues increased due to restricted policies. Since the reopening of universities, the Chinese government put forward a series of policies to ensure students' and employees' health and safety and prevent the spread of the COVID-19 virus to campuses. The first was to check the temperature of faculty, staff, students, and outsiders at the school entrance. People with abnormal body temperature were not allowed to enter. The second was to avoid holding group or gathering activities, such as training courses, sports meet. Faculty, staff, and students reduced or even avoided unnecessary outings. One of these policies applied to school cafeterias, and the cleaning and disinfection of tableware. Reusable tableware was required to be "one person, one use, one disinfection" (Bureau of Disease Control and Prevention. 2020, April 9).

### 2.4. Risk Management

The epidemic sparked great concern in China; Tsinghua University took a series of measures to continuously strengthen the prevention and control of the outbreak at the beginning



of the outbreak. To ensure student's safety, Tsinghua University postponed the spring semester and conducted online courses mainly through Tsinghua's classroom software. Students and faculty were required to complete class registration on the platform and watch the live stream lecture via cell phone or computer (Li, 2020). The teaching system adjusted immediately. Faculty members maintained real-time contact with international students despite time differences and other difficulties, and informed students of the progress of the outbreak prevention on campus and work requirements (Li, 2020). The student learning department in Tsinghua University coordinated with all university departments to guarantee each student's online learning quality. The learning department has opened a support hotline and email for student's security consultation. All members of the department were on duty in advance to answer the hotline, promptly answer all kinds of frequent questions, and cooperate to support students to participate in online teaching activities as scheduled (Student Government, 2020).

On the other hand, in the face of an epidemic, health care workers, patients, and the public experienced panic and anxiety. The Department of Psychology at Tsinghua University and several organizations have launched an emergency public service project, mobilizing a team of experienced psychologists and psychology professional volunteers to conduct online psychosocial science courses and provided one-on-one psychological counseling for health care workers and the public (Gao, 2020). The Tsinghua University Psychological Center provided psychological support services to all students, and each service period was guaranteed to have more than two counselors on duty. To better support international students, the hotline was offered in English from January 30.

## 2.5. Knowledge Gaps

To develop a well-rounded plan to improve Chinese university students'/faculties' campus life condition, we need to have an insight of the life condition of students/faculties during the pandemic and their opinions on the control & prevent measures taken in their universities. Many reports had been done on how Asian universities prepared and what Asian universities had done for the COVID-19 pandemic. The Association of Pacific Rim Universities (APRU) is a network of 56 leading universities in the Americas, Asia, and Australasia. APRU provides its students an exclusive opportunity to connect with peers around the world (APRU,

n.d.). Our sponsor, Tsinghua University, is part of the association. APRU composed a report titled *Universities' Preparedness and Response Towards Multi-Hazards: COVID-19, Natural, and Human-Induced Hazards*. It provided a great summary of how 12 universities in the association encountered multi-hazards during this hard time. However, it did not mention how the limitation in campus activities affected students' and faculty members' mental health. Thus, this is where we decided to investigate by ourselves.

### 3. Methodology

The goal of our project was to research and develop a money-saving, easily understandable, functional method of campus management during the COVID-19 pandemic to help Chinese university students and faculty (SAF) to improve their experience during the pandemic. To achieve the goal, this project contained the following objectives:

1. Investigate students/faculties' opinions towards the campus management during quarantine and the COVID-19 pandemic.
  - a) Access the shortage of mental health consultants and propose recommendations to address mental health during COVID.
2. Establish the mechanism to improve students' and faculties' awareness of COVID-19 during the post-pandemic time.

First, to investigate students/faculty's insights towards the campus management during the pandemic and quarantine, we used a survey that targeted Chinese university students and faculty to help us gain information related to the first objective, which also covered the sub-objective. Also, to further investigate the sub-objective, we conducted several interviews with related officials. Second, to establish a mechanism to improve students' and faculty members' awareness of COVID-19 during the post-pandemic time, we utilized the data collected from the survey to conduct interviews with prevention and control policymakers in Chinese universities to learn the logic behind policy-makings and how to make positive changes.

### Research and Writing Process for Survey and Interviews

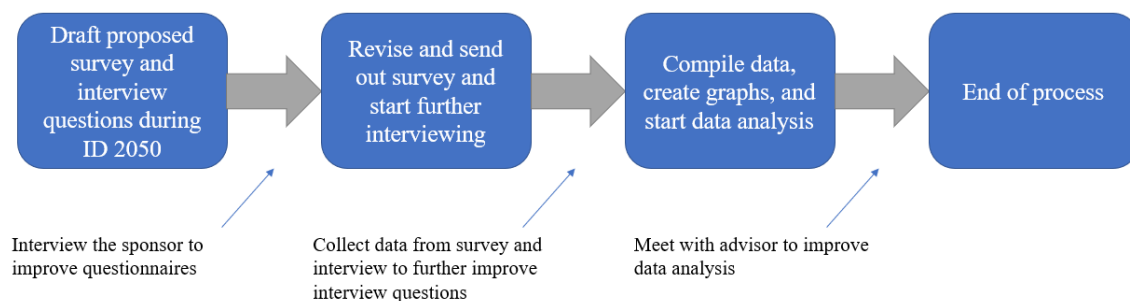


Figure 4: Research and Writing Process for Survey and Interviews Explanation

### 3.1. Objective 1: Investigate Student/Faculties' Opinion Towards the Campus Management During Quarantine and the COVID-19 Pandemic

We collected qualitative and quantitative data on how students/faculty perceived their university's campus management to accomplish this objective. Our web-based survey was designed to help us to learn whether the university did anything to cultivate a safe campus during the most severe period of the COVID pandemic, SAF's mental health status during the quarantine, the university's reopening regulation. The information about Chinese university SAF's quarantine life and their opinions about their schools' control and prevention measures were needed to provide a resolution plan successfully.

One-on-one interviews were used to reach students and faculty familiar with Tsinghua's COVID-19 prevention and control measures. The interviewees contained three to four people, and these interviewees were students and faculty at Tsinghua University. This interview aimed to learn about Tsinghua University's COVID-19 prevention and control methods and mental health consultations during COVID-19. A one-on-one interview can give us the advantage of learning each person's thoughts thoroughly. Additionally, this kind of interview is flexible since it allows us to ask probing questions when necessary. To find our interviewees, we asked our sponsor to help us distribute our invitation to students and faculty, and some of our teammates directly contacted Tsinghua University's faculty and students to send invitations.

Additionally, we created a web-based survey targeting an estimate of 100 Chinese university students and faculty to learn about their lives during quarantine and their opinion about their school's control & prevention measures. The web-based survey gave us the advantage of low cost, easy accessibility for people, and easy-collectible data. Also, since our target sample was Chinese university students and faculty, they usually do not have much free time during workdays, a web-based survey provided them flexibility in time. Our own set of questions were developed since although they were similar research done by other researchers, they did not share their survey questions. We further revised and improved our proposed questionnaire according to the result of the interview mentioned above. For the survey to reach more individuals, we used Tencent Survey to send out the questionnaire. Tencent survey is a free survey application that can be sent through WeChat, which is a social media application that almost every Chinese uses. People can open the questionnaire in WeChat, so it is easier to operate for our sample students and faculty. However, a web-based survey can lead to biases. For

example, non-response biases, which means individuals being chosen for the sample refuse or unable to answer the questionnaire (Stat Trek, n.d.), can occur in a web-based survey. Individuals might not complete the survey because of internet issues, unwillingness to answer, forget to complete it. As mentioned above, biases are hard to avoid, but we managed to reach a 95% confidence level with a 10% margin of error by a sample size of 171. To target our participants additionally, snowballing was used since all our group members have studied in Chinese schools before, so we had friends who study in Chinese universities all over the country. It made the most sense for us to do a convenient sample. Our team members contacted several students and faculty that we knew and sent them our consent form and survey. The survey questions and consent form were provided in Appendix B and Appendix C.

#### 3.1.1.1. Data Collection

Our team used the following steps to set up our interviews. First, we sent emails to invite targeted people to join the interviews and we set up a group chat with the interviewee. Second, after we received consent from the interviewee, our team sent interview time slots for the interviewee to choose from and a Zoom link. The questions we used in our interview were designed two days before the interview. Third, we asked for consent to record the interview to ensure the accuracy of the information we put down during the interview. We interviewed three people. Two interviewees were faculty members of Tsinghua University, and the other interviewee was a graduate student. Recorded data was analyzed to infer the effectiveness of the current prevention and control mechanisms. The interviewing process took approximately three to five days, and we dedicated one week to compile and review the responses.

For the web-based survey, individuals surveyed had three days to complete the survey, and the surveying process took two weeks to gather enough completed and useful responses. We only gave participants three days because we needed around one week to collect and thoroughly analyze the data. The advantage of getting the data analyzed earlier was that we can modify our project to better suit the student and faculty member's preferences. Also, the web-based survey gave us the advantage of easy-collectible data. Tencent Survey allowed us to download participants' responses into Excel. We utilized this feature to summarize closed-ended questions and produced graphs to visualize our survey results. Due to the complexity of collecting open-

ended questions, we read through every response carefully just in case we missed information. After that, we created different categories for each open-ended question and sorted responses according to their similarities to these categories. Although we could have used the graphs generated by Tencent Survey, it is always good to use a second method to calculate and ensure accuracy.

### 3.1.2. Deliverables

The compilation of responses from the interview were sent to the sponsor to have an insight into students' and faculty members' colleges COVID-19 policies, their opinions on these policies, and mental health related information. We utilized the result of the web-based survey to learn the opinion of SAF about their life during quarantine and their campus management during the COVID-19 pandemic. A list of preferred control and prevention measures from different universities were sent to the sponsor. Also, the result of the survey was sent to the sponsor, so they would have an insight into which prevention and control measures SAF was not satisfied with and considered not effective. The sponsor can also gain knowledge on students/faculties' mental health states during the pandemic. Ultimately, we utilized the result to provide a plan to address the shortage of mental health consultants and optimize student's and faculty's campus life during the pandemic.

## 3.2. Objective 2: Establish the Mechanism to Improve Students and Faculties' Awareness of COVID-19 During the Post-pandemic Time

In this section, the objective was to gather information about policies and rules about the prevention of COVID-19 on campus after the universities were reopened and the opinions of students and faculties who work inside the campus. Therefore, one-on-one interviews were used to reach four to five students and faculty. The data from the web-based survey from Objective 1 enabled the team to draft questions on how to raise students' and faculty members' awareness of COVID-19 during the post-pandemic time for those universities who planned to reopen their campus.

Our team asked questions about the current policies of their universities, the money cost to present those policies, the purpose of setting those regulations, the efficiency of current

regulations, reasons for giving up some previous regulations, and so on. These questions helped our team to better understand the logic of making policies and regulations of our interviewee and gathered the information that could not be found on the internet. Our team created some new strategies to help improve the previous regulations and policies.

For the online interviews, we needed to find out our target people first. We implemented snowball sampling, which means our team members asked their friends or relatives to introduce some faculties who participate in making policies and regulations of prevention for their universities or someone familiar with how the regulations or policies operate. Then an official email was sent to ask them if they want to join our online interview. The interview questions were mainly focused on the efficiency and inconvenience of the policies posted in the past by school policymakers.

#### 3.2.1. Deliverable

We used the result of the one-on-one interview to learn students' and faculties' opinions on their universities' prevention regulations. After summarizing those results, our team provided recommendations to the sponsor about improving their policies and what they should do to help students and faculties understand the seriousness of COVID-19 and the necessity of prevention regulations.

### 3.3 Ethical Implication

Our survey was voluntary; if students and faculties did not wish or could not answer any question, they could withdraw anytime. The survey did not intrude on students' and faculties' privacy and possibly would not cause any harm to students and faculties. All participants would consent before being involved. Thus, we considered our study ethical. The Institutional Review Board (IRB) "is an appropriately constituted group that has been formally designated to review and monitor biomedical research involving human subjects" (Office of the Commissioner, 2019). Our research was approved by WPI's IRB board.

## 4. Data Analysis

### 4.1. Survey Results

The survey consisted of 19 questions; 13 were closed-ended (multiple choice) questions, and 6 were open-ended (free-response) questions. This survey assisted us in acquiring knowledge on Chinese universities' prevention and control regulations for COVID-19, students' and faculties' insight on these regulations, students' and faculties' quarantine life, and their mental health state during quarantine. After the release of our survey on May 31, we received approximately 171 responses from Chinese university students and faculty. Among all the survey responses, only around 150 were valid responses. Since the survey contained 6 open-ended questions, some participants might not have the patience to fill out all of them candidly; we had to eliminate invalid responses. A study done by two researchers showed that there could be 4 types of inattentive survey respondents: speeders, straight liners, slackers, and survey bots. Speeders are participants who skim through the available answers provided and choose the answer that meets the minimum of their threshold. Straight liners are participants who choose one answer for all questions. Slackers are participants who leave questions blank or barely try answering questions. Survey bots are scripts created by people that can automatically fill in answers (Moss & Litman, 2020). Referencing these guidelines, we eliminated invalid responses such as responses that contained random characters, irrelevant answers, and left blanks were considered invalid responses which will not be considered in the data analysis process.

#### 4.1.1. Closed-ended Question Results

To begin with is the analysis of the answers to multiple-choice questions. These multiple-choice questions were mainly for score calculation and overall evaluation. These questions helped us understand the interviewee's attitude towards some policies and the environment during the COVID-19 epidemic.

In the third question, we asked the interviewees to rate the quality of life during the epidemic isolation period. In this question, we had a total of 171 valid responses, which was a relatively good response rate, of which 67 respondents felt very satisfied, 66 respondents felt quite satisfied, and 28 respondents indicated that lives were relatively normal and there were no



special emotions. Then the remaining 10 replied that the epidemic made them feel dissatisfied with their daily lives. Through this answer, we found that more than two-thirds of the people considered this type of life option is satisfying, and the number of people who considered not satisfying accounted for less than 10%. This means that although the epidemic is very deadly, the daily life of Chinese people had not undergone tremendous changes, and their quality of life had not significantly decreased.

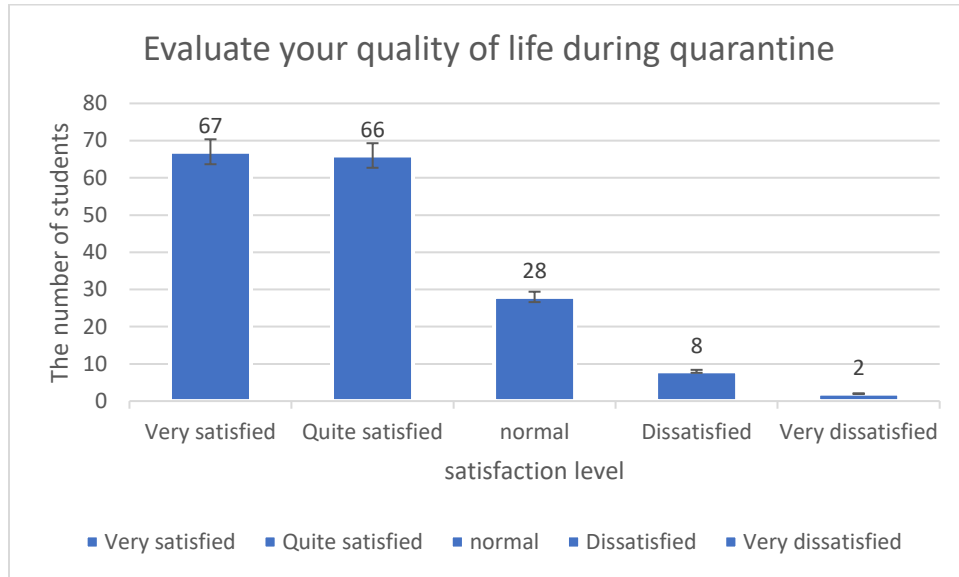
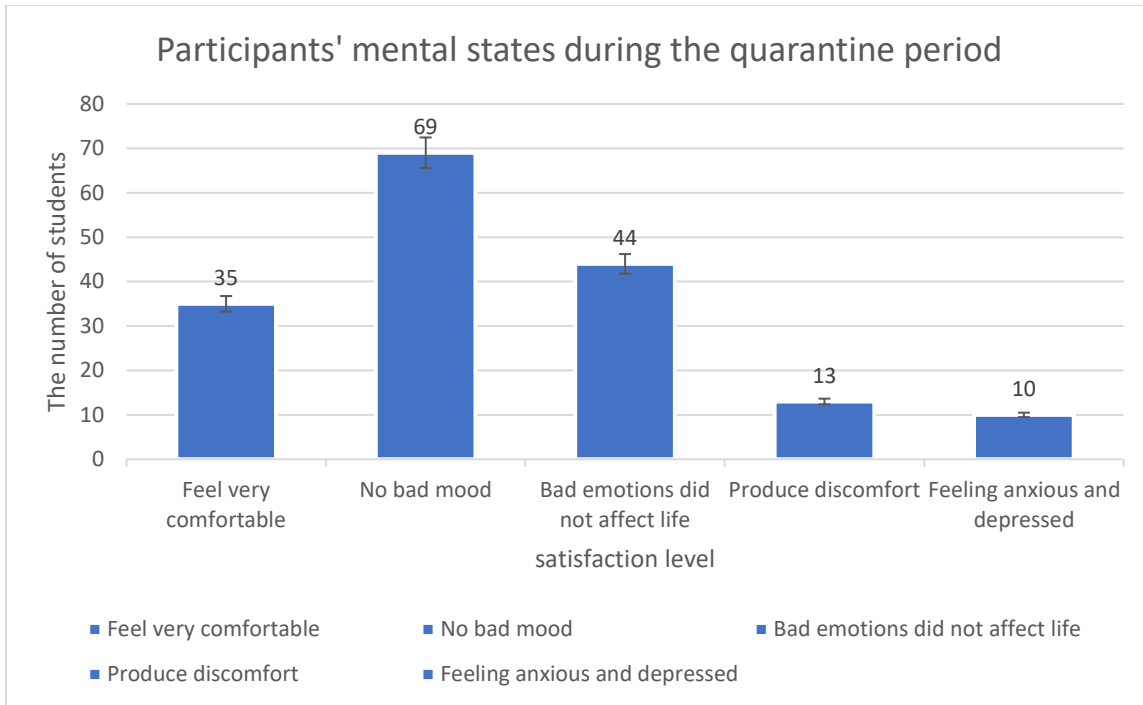


Figure 5: Bar Chart of Participants' Evaluation of Their Lives Quality During Quarantine

In the fourth question, we asked the interviewees about their mental state during the epidemic. We saw that more than half of them think they were in a good state of mind. However, close to 40% of the interviewees believed that they had negative emotions during this period, although sometimes such emotions did not affect their lives. Through the survey, we found that the probability of sampled Chinese students and faculty suffering from depression is 4.4%, but in our survey, the rate of choosing negative emotions to affect life is 13.45%, which is much higher than the rate of 4.4, so we believed that the epidemic affected people's emotions.



*Figure 6: Bar Chart of Participants' Mental States During the Quarantine Period*

In the seventh question, we asked the 175 respondents whether they had received psychological counseling and help provided by the school. A hundred and seventeen respondents indicated that they had received psychological counseling from schools in different ways, and 58 of them did not. Although the proportion of people who received help exceeds 50%, the proportion of people who did not receive help is close to 40%, which was quite surprising to us. Because these 40% were objects that might have potential psychological problems, which made us worry. Our goal was to reduce the number of people who are not helped.

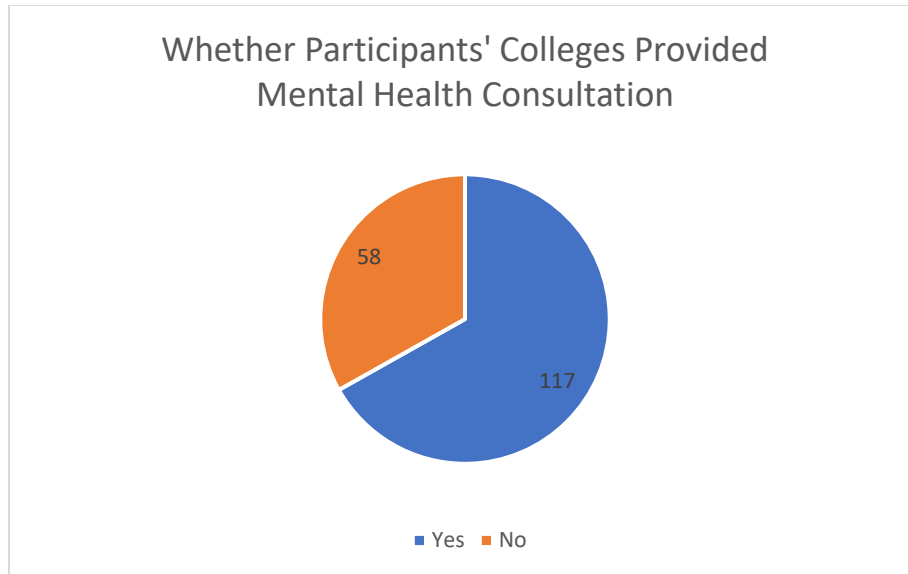


Figure 7: Pie Chart of Whether Participants' Colleges Provided Mental Health Consultation

We all know that during the epidemic, the main way of attending classes for students was through online classes. Then we were more concerned about the degree of satisfaction with online classes. Therefore, we designed the fourteenth question to ask students' attitudes towards online classes during the epidemic. Since most teachers would reduce the difficulty of online courses, most students were satisfied with the quality of online courses during the epidemic, because they could get good grades more easily through online courses. This also showed that negative emotions did not come from online classes and performance problems caused by online classes.

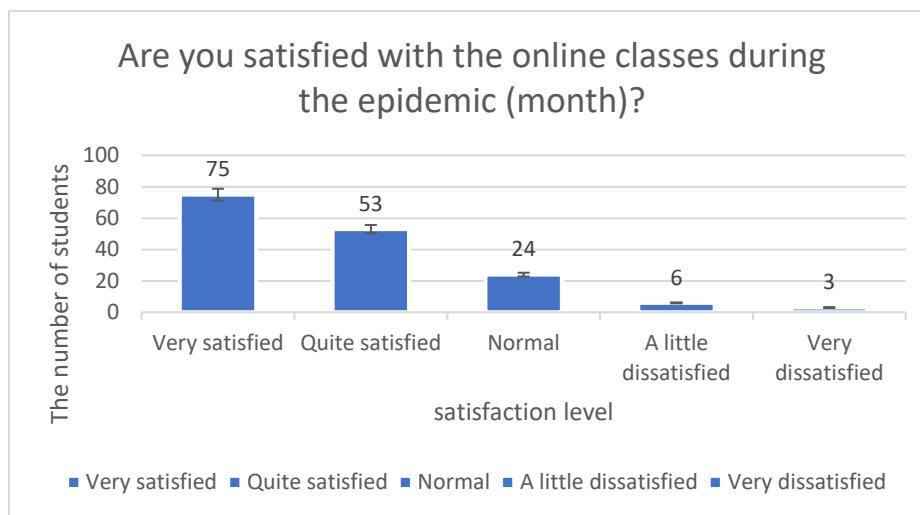


Figure 8: Bar Chart of Whether Students Were Satisfied with the Online Course

Next, we used two questions to ask students to comment on their own and their classmates' compliance with the school's epidemic prevention policies. Through the 16th and 17th questions, we saw that most of the students still complied with the school's policies, which contributes to the improvement of the school's safety situation.

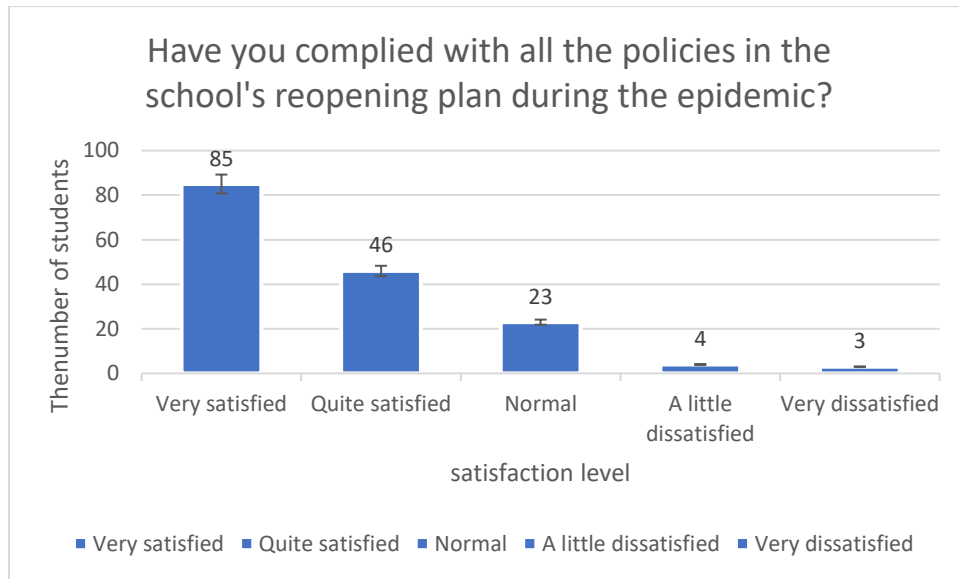


Figure 9: Bar Chart of Whether the Interviewees Complied with the Epidemic Prevention Policy

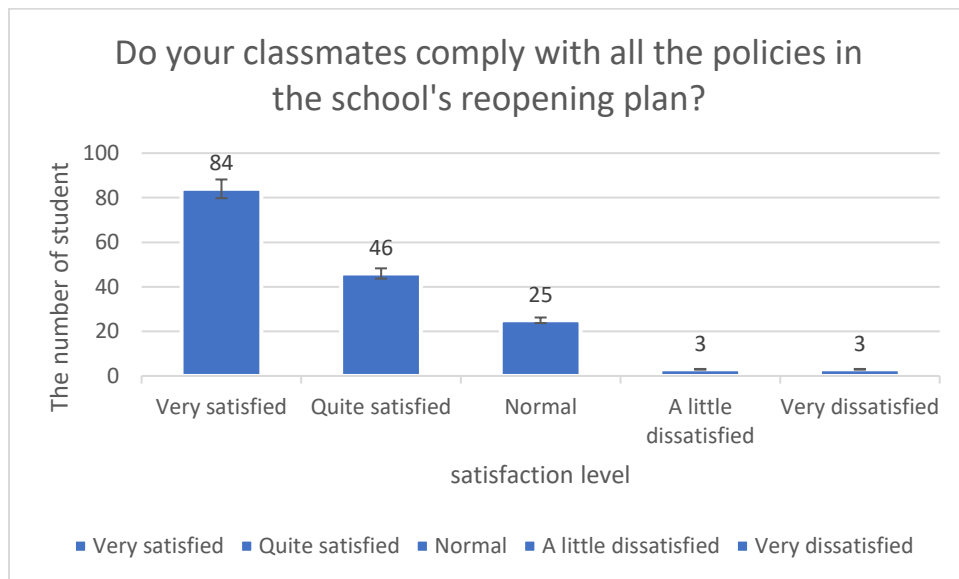


Figure 10: Bar Chart of Whether the Classmates of the Interviewees Complied with the Epidemic Prevention Policy

#### 4.1.2. Open-ended Question Results

The open-ended questions in this survey served as probing questions that allowed participants to further illustrate their thoughts and helped us to better understand how COVID-19 pandemic and quarantine influenced Chinese university students and faculties. We categorized each answer into several categories to help us analyze the data.

In question six that asked about students' and faculty members' quarantine life, 42% of 158 valid responses from participants said their quarantine life was calm and normal. They implied quarantine did not affect their daily life and their mental health. However, the second-largest portion of responses (24%) implied they did not go out a lot and felt bored. Due to the quarantine policy established by the Chinese government, residents were not allowed to go out often. Under this circumstance, it was extremely possible to feel boredom and stress. If we consider “feels mentally empty” and “does not go out a lot, feels boring” as negative mental health states, it was concerning that 37% of the participants faced negative influence on their mental health, which proved the statement made in section 2.3 that people can encounter mental health issues caused by quarantine.

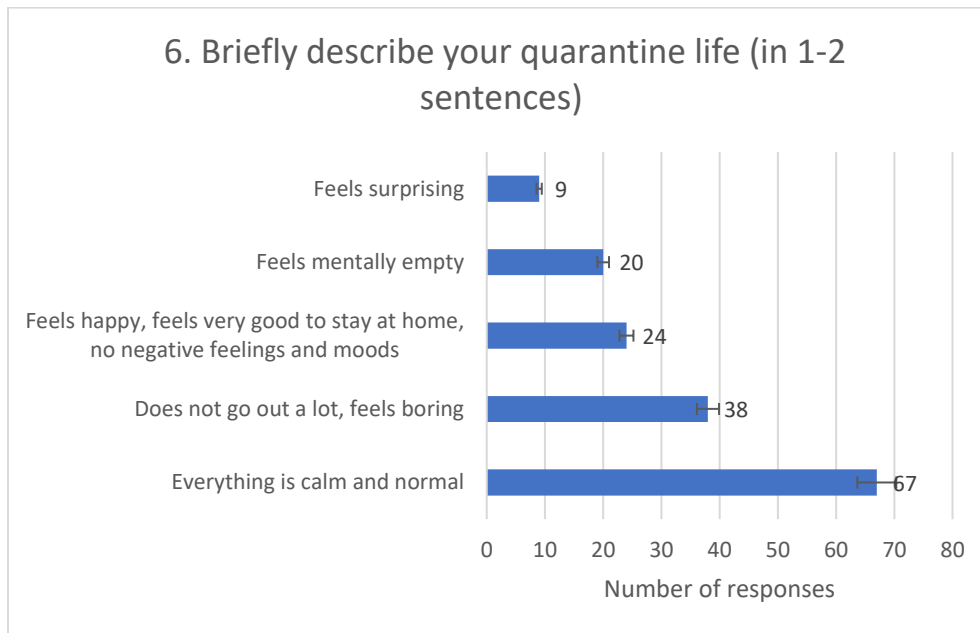
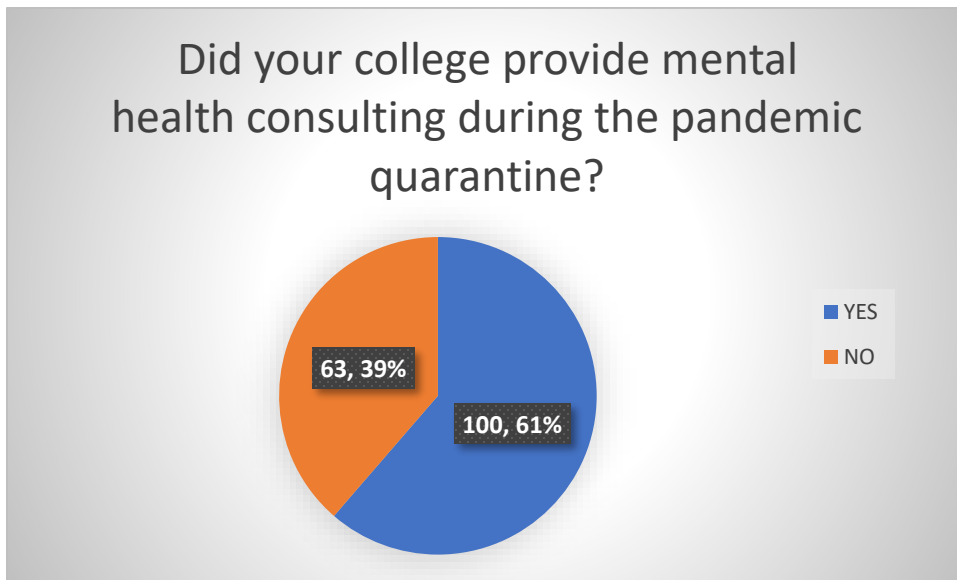


Figure 11: Bar Chart of Participants' Quarantine Life

Additionally, there were questions that explored colleges' mental health consultations and participants' mental health state during the quarantine. From the survey, we were able to

know how many participants' college provided mental health consultants. According to Figure 9, there were 100 participants in a total of 163 valid responses said their college provided mental health consultations during quarantine and 63 participants' college did not provide consultations.



*Figure 12: Pie Chart of Whether Participants' Colleges Provided Mental Health Consultation During Quarantine*

We asked participants who answered "YES" to briefly describe the psychological help provided by the college and participants who answered "NO" to describe their mental state during the pandemic quarantine period. Among participants who chose "YES," we found that most participants' college provided consultation through remote video call. According to Figure 10, we could tell that online consulting played a pivotal role during the pandemic since students and faculties might not be on campus. Among participants who chose "NO," 19 participants' mental state had been very good. However, it was still concerning to find that 17 participants felt bored and annoyed, and five participants felt afraid of the pandemic, and they could not seek help from their colleges' mental health consultation.

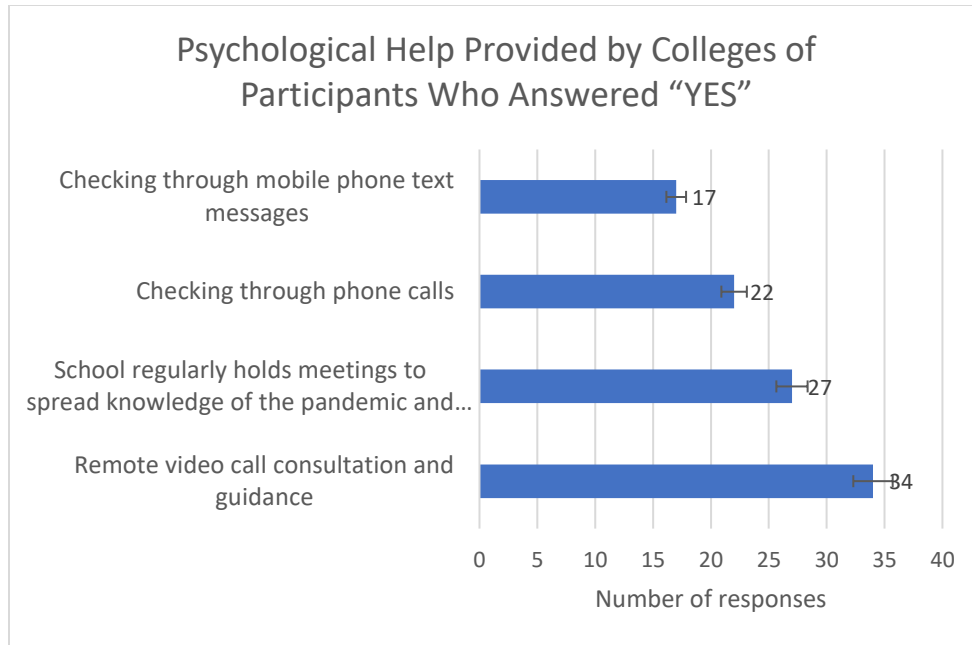


Figure 13: Bar Chart of Psychological Help Provided by Colleges of Participants Who Answered "YES"

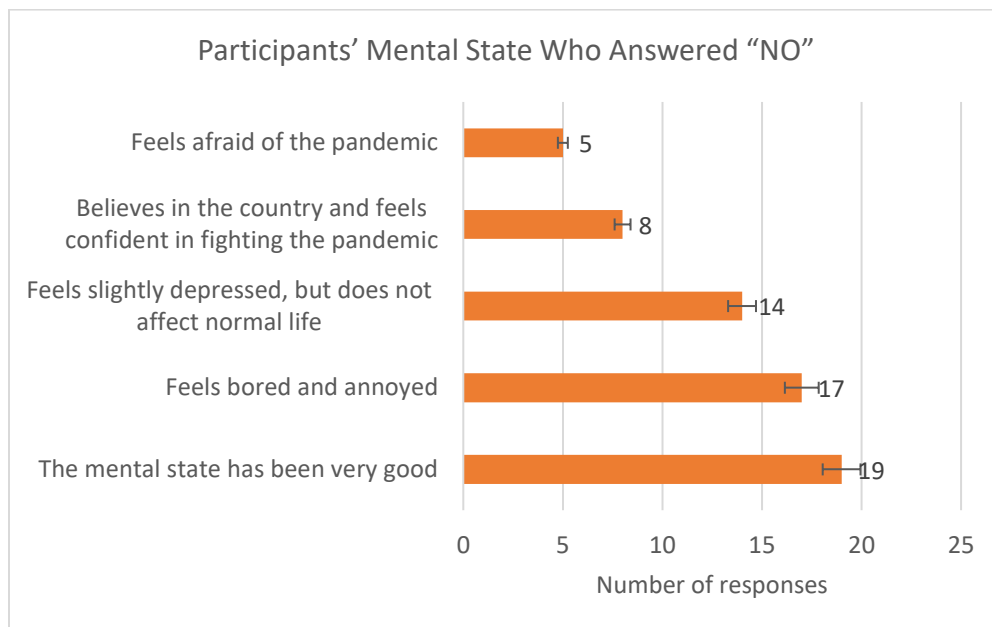


Figure 14: Bar Chart of Participants' Mental State Who Answered "NO"

Participants were asked to describe what their college did to create a safe campus during the most severe period of the pandemic. In question 10, 55 out of 136 valid responses showed that participants' colleges were closed and used closed management which means visitors were not allowed to enter campuses and controlled access of the campus. Twenty-one participants

answered their colleges enforced daily temperature measurement to ensure students’ and faculty members’ personal health. Ten responses implied their colleges applied health code to track students’ and faculty members’ health. In one of our interviews, we knew that our sponsor Tsinghua University also employed health code and called it “Zijing Code.” Health code enables colleges to know which student or faculty is infected with COVID-19 and react accordingly. From Figure 10, we can tell that except for preventing people from being infected by COVID-19, colleges also worked on publicity to spread knowledge on COVID-19, etc.

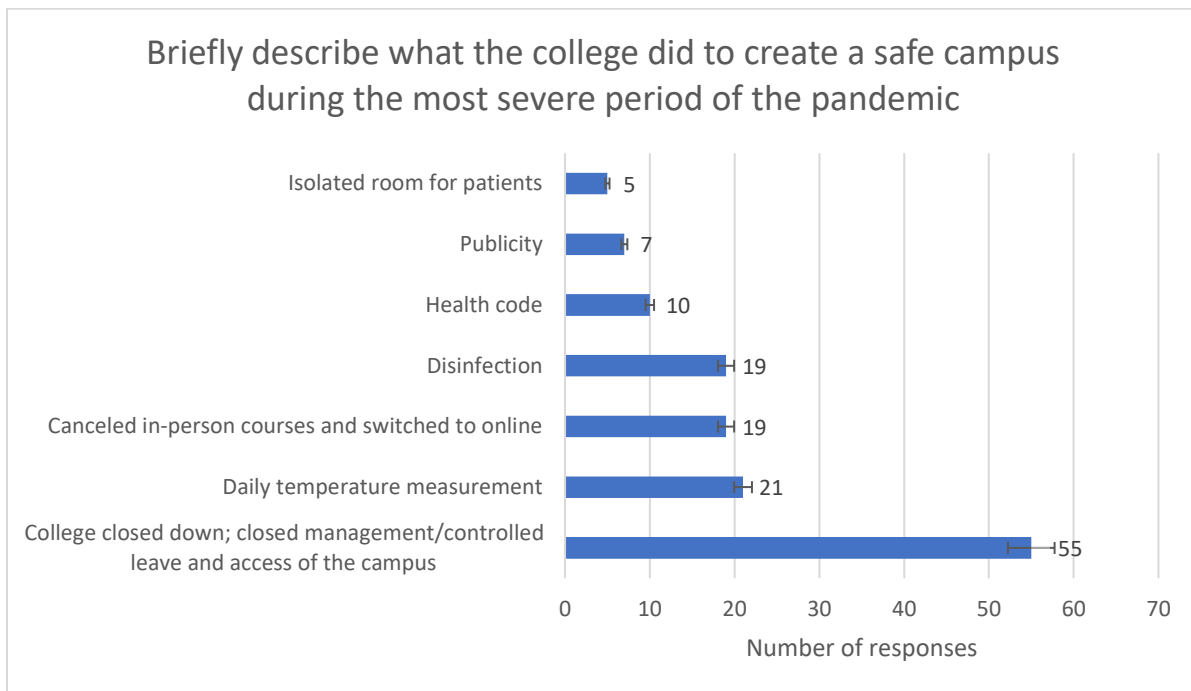


Figure 15: Bar Chart of Participants Colleges’ Methods Used to Create Safe Campuses

In question 12 that asked about what participants think can be improved in their college’s reopening plan, 27% of the participants responded to reopen completely. It is reasonable that the most participants responded that they hoped their college could reopen completely because in question six, 26% of the responses implied participants did not go out a lot and felt boring. With campuses fully reopened, students and participants will have more activities to participate in and have more social lives. Twenty percent of the responses implied students and faculty hoped their campus could perform check-ins for people entering or leaving the campus so colleges could know whether someone who entered or left campuses was infected with COVID-19. As we can tell from the graph, most responses were related to improving the control and prevent methods of



COVID-19, only 11% of responses showed that they hoped to enhance teacher’s teaching enthusiasm. Improving teacher’s enthusiasms can help students to get back to college life faster. Nine percent of the responses implied to improve canteen. Some participants said to improve the food provided by canteens and some participants said to promote social distancing in the canteen.

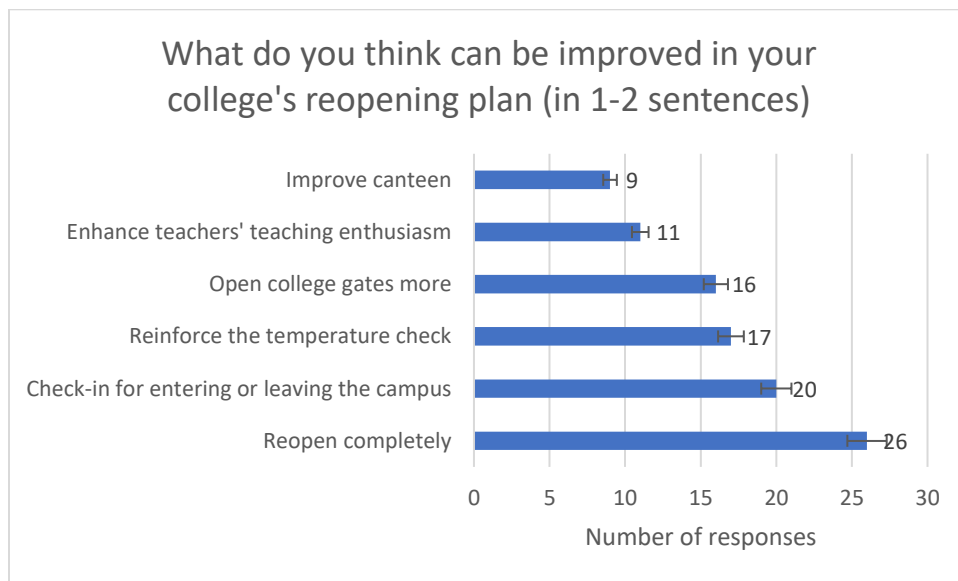


Figure 16: Bar Chart of Participants’ Suggestions on Colleges’ Reopening Plan

We investigated how colleges communicates with students in an emergency during the pandemic. According to Figure 12, 45% of participants’ colleges communicated with them through QQ/WeChat group chat. WeChat and QQ are two biggest communication app that Chinese people use. Many colleges faculty created group chats for each class to communicate with every student. This might be a cultural difference where American college students and faculties usually communicate through email where Chinese college students and faculties communicate through WeChat and QQ since it is faster, and these applications’ functions are sufficient for them to use. Twenty-three percent of answers implied their colleges communicated through text messages or email, 22% of them communicated through website notice, and 2% of them communicated through student representatives. This is where it is similar to how American colleges communicate with people. Four percent of the answers showed they communicates through entering dorm. Again, this might be a cultural difference too.

Describe how the college communicates with students in an emergency during the Covid-19 pandemic (in 1-2 sentences)

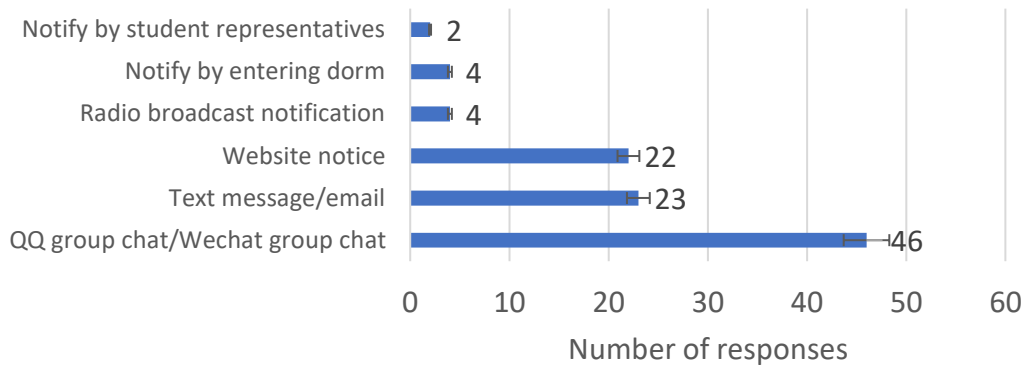


Figure 17: Bar Chart of Participants Colleges' Ways of Communicating

In question 20, we allowed participants to describe their colleges' reopening plan during the pandemic. Forty-five percent of participants replied their colleges opened in-person courses. Conversely, there were 18% of responses revealed their colleges continued online courses. There was a possibility that some participants' colleges allowed students to choose whether they wanted to take online or in-person courses. From the bar chart below, we can tell that 37% of participants' colleges were still reinforcing prevent and control measures of COVID-19 in their reopening plan. Among these responses, 10% of them entered the campus in staggered time, 14% of them disinfected regularly and comprehensively, 13% of them measured body temperature regularly.

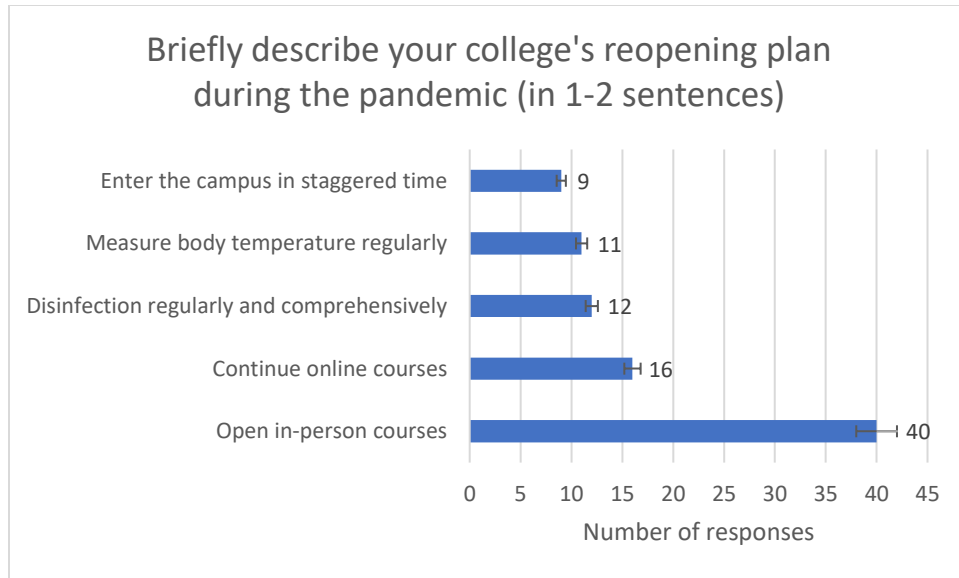


Figure 13: Bar Chart of Participants Colleges' Reopening Plan

#### 4.2. Interview Results

To get more information about universities' prevention, control policymaking, and execution, our team invited two experts who had experience in policymaking and implementation. Both interviewees introduced their work to prevent the COVID epidemic at Tsinghua University and told us some problems about executing the policies. Since Tsinghua University prevention policies changed in different periods, our team would analyze the information that we got in our interviews from the beginning of the pandemic to current situations.

In these two interviews we conducted with Tsinghua faculties, we learned about the initial policies and reopening plans taken by the Tsinghua University. They tried their best to prevent COVID-19 transmission on campus and ensure student and faculty safety.

##### 4.2.1. Tsinghua's Shutdown Time Period

At the beginning of the epidemic, the first step was to shut down the campus to reduce the risk of transmission. Students were not allowed to go inside and outside the campus. One of our interviewees said, "...students and faculties are not allowed to leave the campus, ...during the middle of the epidemic, take-out could not be delivered to the campus. Faculty and students not

staying on campus were not allowed to enter the campus" (Appendix E). From February 2020 to April 2020, all the faculty were not allowed to leave Beijing. Faculty who needed to get into the campus must have certifications from the school management office. Part-time workers responsible for cleaning the campus should report to the campus to get on the campus for once. At the same time, Tsinghua University had canceled the campus tours to reduce the movement of people. Interviewees indicated that all students and faculties staying on campus grouped in the same dormitory building with assigned rooms. One room for 1-2 students or faculty. After the campus shut down, Tsinghua University postponed the spring semester and conducted online instruction mainly with Tsinghua's classroom software. From our interviewee, "the online system was initially lagging due to the number of students attending classes, but it was improved and used until all students returned to school." (Appendix E) The upgraded system can accommodate all students to take classes online.

Our interviewees mentioned some difficulties during the COVID pandemic. Based on the interviewee's description, our team realized that many students and faculties had problems traveling. Our interviewee stated that Tsinghua university regulations were much stricter than the Beijing government's requirements to keep COVID-19 out of the campus. One of the executed regulations was that students who had got out of the campus could not go back into the campus. Since Tsinghua university had strict regulations of prevention and isolation, many students and faculty lost their chances to learn abroad. Also, faculty felt uncomfortable in meetings since they could not talk to each other face-to-face, and it was not convenient to share meeting materials. However, even though the situation was so bad, our interviewee still believed that most students and faculties follow the school regulations (Appendix D).

#### 4.2.2. Tsinghua's Reopen Period

After the outbreak in Beijing is under control, Tsinghua University published the campus reopening plan. To ensure that students and faculty can return to campus safely, Tsinghua University formulated more than 30 unique work plans and emergency plans for the prevention and control of campus epidemics after students return to campus, covering various aspects such as return approval, entry, teaching arrangements, health monitoring, dormitory management, and meal management. From the interviewee, "The university adopts a batch return strategy in the

early stages of return to ensure that the campus preparedness measures can be operated effectively. Graduates will be the first batch to return to school as a trial run, while student workers such as classroom assistants can be the second batch to return as a priority to facilitate the handover process. Tsinghua University organized a mass return to campus after the outbreak has been effectively controlled nationwide..." (Appendix E). During the student return day, Tsinghua University arranged pick-ups at the train station and airport, informed returning students in advance of the relevant location positioning and exit routes and arranged volunteers for guiding students.

An important WeChat program developed by the Tsinghua University was their campus security code "Zijing Code" (紫荆码). Tsinghua students, faculty members, and staff would have the "Zijing Code" after registering on the WeChat program by entering their ID number and password. According to Tsinghua University's reopening plan, students applied for a return to campus through the online service system and filled in the homecoming itinerary information according to their schedule and conditions to get a return approval by the Tsinghua University. After returning to campus, the first thing students need to do was to activate the Zijing Code in the student residence. Faculty and returning students logged in to the Zijing Code and took their daily temperature according to the health monitoring requirements. A green color Zijing Code will be displayed when their temperature is average. It was also helpful to check personal location; according to our interviewee, "Students were still required to report their temperature and other health information on the Zijing Code at the beginning of their return to campus... Student's location within the school was strictly monitored to facilitate control and tracking in the event of an outbreak" (Appendix E). When students and faculty entered departmental buildings, cafeterias, and gyms, they could scan the QR code posted at the entrance to confirm their access and health status. Students must show their Zijing code to enter the campus, and they were required to declare when they leave campus. The campus various notices and rules for opening places could be released through the program.

According to one of our interviewees, "Before the students returned to school, the cafeteria tables at Tsinghua University were partitioned. Every cafeteria has added plexiglass partitions to reduce the risk of students contracting the virus from droplets from their meals. The university's logistics department disinfects the dining halls every four hours to reduce the risk of

transmission" (Appendix E). In addition, Tsinghua University opened other cafeterias to guide students to eat in different periods. Students must scan the code to enter the cafeteria; the cafeteria entrance has set up the fastpacking channel and dine-in channel to reduce the queuing time. The tables were equipped with additional plexiglass partitions to expand the number of dine-in seats; the cafeteria has encouraged the take-out meal. At the same time, for the sake of dining safety, Tsinghua University required students and staff to dine in separate canteens in principle, and staff generally went to the nearest staff canteen to eat and encouraged staggered meals in groups.

Most students strictly complied with Tsinghua University's strict requirements and policies, but a small percentage of students were dissatisfied with the inconvenience caused by the strict epidemic prevention and control measures and did not comply with the requirements. In the materials that Professor Yang provided, she mentioned that Tsinghua University did much work in making knowledge of hygiene of COVID 19 widely available to students and faculties (Appendix D). Professor Yang believed that the most important thing about making policies is that students and faculties must follow the rules. In order to achieve that, students and faculties shall understand the seriousness of COVID-19 and raise their awareness about COVID-19. In professor Yang's experience, conducting propaganda was an excellent way to raise students' and faculties' awareness about the COVID pandemic and made those policies process well. For example, Tsinghua university invited the doctoral lecturers at the school to carry out the theme of the epidemic, such as "social governance" in the prevention and control of the epidemic, the emergency response mechanism of China's public health events under the background of COVID-19, and the China emergency response mechanism under the international perspective, further enhancing the depth of theoretical study (Appendix D). Also, Tsinghua university invited many experts in studying COVID-19 and work in government agencies to explain the reasons for those prevention policies. Mr. Li Liang, deputy secretary of the Party committee of the faculty department; Mr. Wang Yong, director of the party office; Mr. Cha Hao, leader of the research group; Mr. Weng Wenguo and Mr. Shen Shifei of the Institute of public security were invited to have in-depth exchanges with the students, to guide the students to view the unusual epidemic experience from a more extended and broader perspective, and not to relax their scientific research and study on this excuse (Appendix D).

Our interviewee also talked about the current situation at Tsinghua university. Since China did not have many cases, Tsinghua University had already eliminated a lot of strict regulations. Faculties were free to travel around the country except in some high-risk areas. Students were free to get in or out of the campus. According to our interviewee's description, nearly all the school faculties had taken two doses of COVID vaccines. Tsinghua University's COVID prevention team would send them emails to ask why faculties did not get the vaccine after the deadline. Tsinghua University encouraged students to get vaccinated. As the interviewee said, "about 90% of the university students have fully received COVID-19 vaccine". (Appendix E). It took Tsinghua university about five months to help faculties and students to get the vaccine.

Our interviewee mentioned that she felt great about Tsinghua University's regulation of COVID-19 prevention. Although some regulations affected her work and brought up some inconvenience to her life, she still believed that they could protect her life and keep her healthy (Appendix D).

#### 4.2.3. Interview Summary

Based on the interview our team did in the past two weeks, we had a basic understanding of policy made by Tsinghua University, which was a sample of Chinese universities during the COVID-19 pandemic. Credit to our interviewees, we received lots of information on policies since our interviewees were familiar with regulations that the Tsinghua University took. Conversely, we did not receive much information on students' and faculty's mental health since we were not allowed to interview a psychological counselor. From our interviewees, Tsinghua University, in conjunction with the hospital and other departments, has offered courses and activities on the epidemic to expand students' knowledge of the epidemic and guide them to look at the experience from a different perspective. In general, Tsinghua University played a positive role in helping students psychologically to have a positive understanding of the epidemic, not to panic and be anxious, and to continue their normal study and life.

According to the conversation with our interviewees, Tsinghua University had relatively strict rules about the prevention and isolation of COVID-19. The primary purpose of building those strict rules is that the policymakers wanted to keep the virus out of the campus. In order to

make the regulations be executed in the right way, Tsinghua University did a lot of work in technical and psychological aspects. For example, in technological aspects, Tsinghua University created a new system which is Zijing Code in order to check students' and faculty's health status and eliminate irrelevant people getting into the campus. In psychological aspects, Tsinghua University had invited a lot of experts about public health and COVID-19 to make a speech on campus. Our interviewee, Professor. Yang believed that these movements could increase students' and faculty's knowledge about the prevention of COVID-19 so that they could cooperate with some strict rules made by the school management office. In fact, Tsinghua University's regulations and actions about prevention and control of COVID-19 had a good effect. Both of our interviewees mentioned that none of their students and faculties were infected during the COVID pandemic.



## 5. Conclusion

As we finished our data analysis, we found some critical factors we need to present first. Since we utilized convenient sampling and snowball sampling, many survey responses were from several particular locations such as Jiangsu province, Guangdong province, and Shandong province. Conversely, we did not receive many responses from Beijing city. This factor might result in a location bias and might not fully represent every Chinese university's student and faculty. During our investigation in the past four weeks, our team received feedback from many students and faculties. According to our findings, to ensure a safe campus, colleges should reinforce disinfection, daily temperature check, utilization of health code, control access of campuses, improve canteen, improve teacher's teaching enthusiasm, and publicity of COVID-19 related information. In order to help students and faculties to maintain a healthy mental state, colleges should provide online mental health consultation through video call, phone call, email, text messages, and collective mental health consultation.

## 6. Recommendations

### 6.1 Tsinghua University Peer Helping Platform

According to our research, many students and faculty encountered negative mental influences during quarantine. They could not seek psychological help from their colleges. Furthermore, although some students/faculty's colleges provided mental health consultation, they were afraid to go to consultations because they felt either their situation was not as extreme to visit or felt ashamed to visit. Under this circumstance, we proposed an anonymous peer helping platform called "Treehouse" (树屋). Similar platforms in China called "Tree Hole" (树洞) allowed people to express their feelings. However, these platforms did not have people on the other side to talk to users and help them feel better. Treehouse allows students and faculty to talk to peers when they feel mentally stressed and do not think it is necessary to visit a mental health consultation. Most of the time, people feel more comfortable talking to peers instead of authorities. In addition, Treehouse works like a bridge between students/faculty and professional mental health consultation. When Treehouse staff encounter users, who seem to have severe mental states, Treehouse staff will encourage them to visit a mental health consultant.

#### 6.1.1. Recruiting

Recruit notices will be spread through bulletin boards, college websites, Tsinghua University WeChat public accounts, emails, etc. A questionnaire will be attached with the recruiting notice. The survey will ask about their willingness to help others, whether from the psychology department. Students/faculty that are willing to help each other are the targeted people we want to recruit. Students/faculty from the psychology department might be able to provide more professional help for users. However, since Treehouse is a platform that gives users a chance to talk to someone when they encounter mental distress, employees at Treehouse do not need to know all professional knowledge related to mental health consulting. Having students/faculty from the college's psychology department can always help in various aspects. Students and faculty that are recruited will be put into a WeChat group and wait for further notice.

### 6.1.2. Training

One of our next suggestions is about the school's training for teachers and students who provide psychological counseling. Our previous series of questionnaire surveys and interviews with teachers and staff found that a considerable proportion of students did not receive psychological counseling provided by the school. This was generally due to two reasons. One reason was that the school did not carry out relevant publicity, which led to the students not knowing who to talk to and to resolve the bad emotions in their hearts. Another reason was that since the number of counselors in the school is too small, students had to wait for appointments for several weeks, which made them feel even more annoyed. In this part, we mainly make suggestions for the insufficient number of school counselors.

We believe that the school should establish a relatively complete training system for psychological counselors. Since it hires high-priced psychological counselors from outside the school, it is better to use the professional expertise of the psychology teachers in the school. Schools can hire some school psychology teachers in the name of part-time jobs. These teachers are already very proficient in psychology to participate in psychological counseling with simple learning. Moreover, teachers can also use these students to participate in counseling and counseling to complete some of their psychology research projects since they can obtain enough research data. Nevertheless, obviously, relying only on the help of some teachers cannot wholly change the problem of long school appointments. Because the teachers have their own courses, these teachers do not have the time to immerse themselves in the work of psychological counseling, so this method of training teachers is a solution to short-term problems. In the long run, we think that training psychology department students are a better way. These comprehensive universities recruit many psychology students every year. These students have passed four years of undergraduate education and have a relatively complete understanding of psychology knowledge. Before looking for a job, it is necessary to have a certain internship experience. Therefore, the school can provide psychological counseling to student volunteers to provide them with this internship opportunity. Let these students who want to become volunteers receive the training of psychological counselors in the school. These students can learn the knowledge and language skills of standard psychological counseling and enrich their internships by communicating with the students who come to counseling. Because new students enter the campus every year, we believe that such a training model can ensure to a certain extent that the

school has enough volunteers to help students with psychological difficulties in the long run. Moreover, for Chinese students, we all have a mental state that is difficult to change, that is, no matter what problems we encounter, we are not very willing to communicate with teachers. Because we always feel that communicating with teachers is something that makes us feel nervous. Therefore, we believe that the students' poor psychological condition may hide their feelings from the teacher because of their nervousness. Therefore, when these students are faced with psychology volunteers who are also students, they may be more likely to communicate without feeling very nervous. Additionally, maybe they will become friends because of this peer helping platform.

Therefore, our recommendation in this section is that the school can involve some psychology students and teachers in helping the school to provide psychological counseling through training.

#### 6.1.3. Platform

We chose to use the most convenient platform for Tsinghua University and its students and faculty, the WeChat public platform. WeChat Office Account is an application account applied by developers or businesses on the WeChat public platform. The platform enables comprehensive communication and interaction with specific groups of people in text, pictures, voice, and video. It has formed a mainstream online and offline interactive marketing method of WeChat. In the WeChat Office Account, the operator of the public website needs to post an article or video about developing and maintaining positive energy two to three times a week to encourage students to communicate with each other and bring positive energy into life. On the other hand, students can choose to subscribe to “Treehouse” to view previous posts and receive new articles and notifications. There will also be contact information and locations for professional psychological counseling in the Office Account. The WeChat Office Account added a link to the WeChat Mini Program where students can chat anonymously on a one-to-one basis.

WeChat Mini Program is an application that can be used without downloading and installing. Users can open the application by scanning or searching. Tsinghua University needs to register the WeChat Mini Program on WeChat public platform, and after completing the registration, developers can perfect and develop the information simultaneously. Then fill in the

basic information of the Mini Program, including name, avatar, introduction, and service scope. After the Mini Program developer needs to bind the development information configuration, the developer can download the developer tools and refer to the documents for the development and debugging of the Mini Program. After completing the development, the developer can release the Mini Program after submitting the code to the WeChat team for review and approval. When the Mini Program is released, students can log in through their WeChat account to have a new anonymous account. Students can enter the chat room and express their worries and troubles to relieve the pressure or anxiety. The chat process is relaxed and enjoyable, and students do not have to worry about any of their personal information being leaked. Trained students/volunteers will have a set amount of time online during which students who need help can have one-on-one live chat. Students can send messages to the Treehouse at any time, and volunteers will respond the next day promptly. As mentioned above, if volunteers find that a student needs professional counseling, they can send the link and information to the student and encourage them to get professional counseling.

## 6.2. Registration System

In this section, our team recommended Tsinghua University work with the government and let the students provide Zijing code and Beijing health code instead of requiring students to apply for approval before leaving the campus.

According to our investigation, our team found out that Tsinghua University used a self-developed registration system in order to check students' locations out of the campus. However, this system caused some inconvenience in students' personal lives. Some of the students did not follow the regulation and left the campus without reporting to the university. In this situation, it was hard for the university to track students' locations in off-campus areas. Our group discussed this situation and found out that the registration system might not fit the current prevention period. The registration system was created during the campus shutdown period. However, Tsinghua University had already reopened, and students had demanded an easier way to request leaving the campus. Waiting for approval had cost students much time, and they had to tell the school their purpose of leaving. In this case, some students decided not to follow the rules and

leave the campus without applying for approval. In this situation, it was hard for the university to keep the students and faculty safe.

In order to improve this kind of problem, our team decided to make some suggestions to the Tsinghua University. Based on our group discussion, we found out that the purpose of the registration system was to track students' off-campus location and make sure students did not visit some high-risk areas. Also, this system helped the university to find and isolate people who were patients' close contacts. Our team came out with the idea of replacing the old registration system. The university could work with the government and use the city's health code. The Beijing government has its own health code which can track people's location in Beijing. This health code was created on the WeChat platform, which is the same platform that Zijing code is using. Beijing city's health code can provide a code that showed people have or have not been to high-risk areas in Beijing. Students can provide their Beijing health code and Zijing code before they enter the campus. At the same time, Zijing code verifies that people belong to Tsinghua University. The city's health code provides a health certification for students who left the campus. Students would no longer need to wait for approvals from school, and their off-campus location will be more scientifically recorded.

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## Appendices

### Appendix A: Project Timeline

TASK	WEEK							
	PQP	1	2	3	4	5	6	7
Gathered research and journals related to the project								
Determine an initial approach to improve the campus safety during Covid-19								
Contact the sponsor to schedule an interview								
Interview a professor in Tsinghua University who is in the Campus Safety department								
Designed a sample proposed questionnaire								
Create consent letter								
Collect further information on APRU's efforts in facing Covid-19								
Started IRB application								
Created final presentation								
Submitted IRB application form								
Final presentation of proposal								
Finalized proposal								

## Appendix B: Sample Proposed Questionnaire

### Sample Proposed Questions

1. What is your role in your campus? (Student or Faculty)
2. Rate your campus quarantined plan during the Covid-19 pandemic. (on a 1-5 scale, from least satisfy to most satisfy)
3. Rate your school re-open plan during the Covid-19 pandemic. (on a 1-5 scale)
4. Rate the quality of your life during quarantine (on a 1-5 scale).
5. Were you satisfied with the online study during the most serious period of Covid-19 pandemic? (on a 1-5 scale, from least satisfy to most satisfy)
6. Briefly describe your life during quarantine.
7. What was the college doing to cultivate a safe campus during the most serious period of Covid pandemic?
8. How does the school communicate with students in an emergency in the Covid pandemic?
9. What is your mental health status during the quarantine? (On scale 1-5, from least anxiety to most anxiety)
10. Did your school do something to provide mental health support for students during the quarantine period? (yes or no)
  - a. If yes, describe your school's actions to provide mental health support for students. If not, describe your emotion during the quarantine time.
11. Could you simply describe the re-open plan of your school? (1-2 sentences)
12. Did you follow all the policies from the re-open plan of school? (yes or no)
13. Did your classmates or work mates follow all the policies from the re-open plan of school? (yes or no)
14. Rate your satisfaction after your school re-open. (on a 1-5scale)
15. What aspects of your school's re-open plan can be improved? (1-2 sentences)

## Appendix C: Informed Consent

### **Informed Consent**

We are a student research group in Worcester Polytechnic Institute located in Worcester, United States. This project focuses on campus safety and student activities during pandemic and its impact on future campus life. This project will help Chinese universities to prepare for future similar pandemics and ensure the safety and mental wellness of students and faculties.

We are interviewing/surveying as a part of our research project. This interview/survey allows us to gain information on Chinese university students'/faculties' opinions on their life during the Covid-19 pandemic and how their campus life is being impacted by Covid-19 and quarantine.

This is an anonymous interview/survey, and individual responses will not be published. Responses will be collectively analyzed. This interview/survey is voluntary, you may choose to participate. You can skip any question that you do not wish to answer. We would appreciate your participation. You are more than welcome to email us any question before you begin answering. If you are interested, we can provide you a copy of our result when the research is done.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact: Wenjie Zhang, Email: [wzhang3@wpi.edu](mailto:wzhang3@wpi.edu), Jianyu Liang (Advisor), Email: [jianyul@wpi.edu](mailto:jianyul@wpi.edu).

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix D: Interview Minute 1

1. What is your work at Tsinghua University? Can you tell us a little bit about your background and work? Self-introduction?

P: I am a research secretary at Tsinghua University. My job is to assist professors in their research work, and I also participate in some administrative rules of the university.

1. What prevention measures did you and your team take during the COVID19 outbreak? What were the effects?

P: During the period of COVID-19, as a faculty, we carried out a series of work according to the regulations of the school. Do you need to know the school side or the individual side?

1. We would like to know about the campus policies.

P: Okay. For the campus policies, I'll focus on the faculty side first. At the time of the strictest epidemic prevention and control, the requirement for our staff is not to leave Beijing. The entire admission process is subject to application procedures, and permanent staff members are admitted with a permit. The permanent staff includes, but is not limited to, those who help clean the interior of Tsinghua campus, and those who maintain the greenery. These people are managed by epidemic management teams under Tsinghua University. They are a group of people who have been on campus for a long time. There are also a group of people who work in the university temporarily, such as those who have been in the university for one or two days. In this case, the departments and colleges report to the higher authorities at all levels. Therefore, in terms of personnel control, Tsinghua University is very strict, including our staff. If they want to leave Beijing, they are not allowed to leave Beijing at the most stringent time. Later, after the policy was not strict, they also needed to declare to the university to leave Beijing. If the staff have to go to the epidemic area for necessary reasons, in addition to declaration, they have to be quarantined at home for 14 days after returning to Beijing before returning to campus.



1.What's your attitude towards the campus epidemic prevention measures of Tsinghua University?

P: My attitude towards the epidemic prevention measures of Tsinghua University is quite positive. I feel safe. Whether for students or teachers, the campus is a relatively closed area.

1.What kind of epidemic prevention requirements does the government have for Tsinghua University?

P: In terms of implementation, Tsinghua University has followed the government requirements during the epidemic. Including those epidemic prevention measures that I just mentioned.

1.What special epidemic prevention measures do you and your team have in addition to the requirements set by the government?

P: I feel that Tsinghua University's control of the epidemic will be more stringent than the national requirements. Because Tsinghua University needs to play a role as a benchmark. Because Tsinghua University is afraid that the health and safety of students and staff will be threatened due to problems on campus. Therefore, Tsinghua University's implementation of epidemic prevention and control will only be more stringent than the government's requirements.

1.What kind of difficulties did you encounter during epidemic prevention? How did you and your team solve the problem?

P: The difficulties were caused by various inconveniences during the epidemic, including travel and other activities that were affected. For example, Tsinghua University sends out some students every year, but last year, these programs were affected. Some of the programs for faculty and staff to go abroad were also cancelled last year. Except for some very few important events, all other overseas programs have been cancelled. Faculty meetings are also affected to a certain extent. However, the faculty and staff community is still more concerned about the safety of the campus, including their own lives. Therefore, basically all faculty members will

understand the university's measures. The staff will report to the school and get permission to do their work.

1.As far as you know, do students strictly abide by the school's regulations and policies?

P: My understanding is that most students follow the school's rules strictly. Students have to declare to the school if they want to leave the campus. In the strictest period of control, students can only return to campus after they have left the school through the school's declaration. If a student leaves the school without a declaration, he/she cannot enter the campus even if he/she has a student ID. The school is actually aware of those who leave the school because the school guards or other workers will report these cases. There were rules that are flexible and also mandatory rules. Even if a student needs to leave campus during a holiday, he or she needs to report it to the school and wait for the school to assess the risk of leaving.

1.How are the campus epidemic management and regulations formulated in Tsinghua University?

P: It is formulated according to the major policies of the Beijing Municipal Commission of science and education.

1.In the face of the post-epidemic era, what kind of changes will Tsinghua University make to its epidemic prevention and control measures?

P: According to my understanding, the international program is still not liberalized, but the domestic program is basically liberalized now. Because after more than a year of integration, many people have gradually gotten used to the university's policy and will follow the university's requirements before going out to declare.

1.What is the current vaccination status of Tsinghua students? What percentage of students have received the COVID19 vaccine?

P: I don't know much about the students, I can ask some students about the students' percentage later. But basically, all staff members have been vaccinated. Except for some people who are not suitable for vaccination due to medical reasons, all the faculty members need to be vaccinated. Tsinghua University organized 5-6 rounds of faculty and staff vaccination for COVID19. The Tsinghua University outbreak prevention and control team sends out emails to inquire about the reasons why unvaccinated faculty members have not been vaccinated. The percentage of faculty and staff vaccinated is roughly 90%.

1.Does the university provide counseling or other psychological support to students or staff during the quarantine period?

P: As far as I know, there was no counseling for staff. Students were mainly helped by their assistant. Basically, there is no special counseling for faculty members, and generally speaking, there is not much demand for counseling.

**What's your job in Tsinghua University? Could you tell me something about your background and work? Introduce yourself?**

P: I am now working as a postdoctoral in Tsinghua University and in the Security Department of the University. Now I am mainly responsible for the management and implementation of the epidemic prevention work of Tsinghua University.

**What preventive and isolation measures did you take with your team during COVID-19? What is the effect?**

P: during the last 1-2 months of last year, schools had received some vague information about COVID-19. But at that time, Tsinghua University did not introduce regulations or other strategies on epidemic prevention. Tsinghua University began its epidemic prevention work around the beginning of last year's Spring Festival (the second day of the Lunar New Year). At that time, almost all the students had left the school because of the Spring Festival holiday, so the first reaction of the school was to inform all the students who were not in the school not to return to the school after the Spring Festival holiday. At the same time, the school implements closed management. At the beginning of the epidemic, students were not allowed to leave school, but takeout could be delivered to the school. In the middle of the epidemic, takeout is not allowed to enter the campus. Teachers and students who are not staying are not allowed to enter the campus. Students are allowed to enter the campus canteen for meals, but keep social distance. The school has developed a set of online teaching system, and all teaching activities are carried out online. When the original online teaching system started to run, it would get stuck due to the excessive number of students in class. Later, it replaced the newly developed system and has been used until all the students returned to school and opened the offline courses. Inside the school, students' physical condition is counted from school to department to class. At the beginning of the epidemic, the school developed a simple system on WeChat platform. Students need to report their health status, including temperature, location and travel history 1-3 times a day.

**What's your attitude towards the campus epidemic prevention measures of Tsinghua University?**

P: my attitude towards epidemic prevention measures in COVID-19 is still relatively supportive. However, teachers and students may be dissatisfied and do not understand the inconvenience caused by the strict epidemic prevention and control measures. But from the perspective of the school, to ensure the health and safety of students is the first, so even if there are voices of opposition, the school will also implement some relatively strict regulations.

**What kind of epidemic prevention requirements does the government have for Tsinghua University?**

P: In this aspect, I may not have access to this information, but Tsinghua University will certainly be much stricter than the government's requirements. The university is also equivalent to a very crowded public area, so the requirements for epidemic prevention will be more stringent.

**What special epidemic prevention measures do you and your team have in addition to the requirements stipulated by the government?**

P: Tsinghua University has developed its own school health code and named it the Zijing code. Students need to fill in the relevant information of the forbidden code on their mobile WeChat. In the early stage of returning to school, the school adopts the strategy of returning to school in batches to ensure the effective operation of the school's epidemic prevention measures. The first batch of graduates return to school as a trial, and student workers such as class assistants can return to school as the second batch to facilitate the handover. After COVID-19 was effectively controlled nationwide, the organization returned to school on a large scale. The school will judge whether the students have the right to return to school according to the epidemic situation in the place where the students are located. If the student's place of residence occurs in COVID-19, local students will not be allowed to return to Tsinghua University. The returned students will be brought back to the school by the class assistant or the teacher. Tsinghua University will send special vehicles to pick up the students back to school. Students returning to school need to receive 14 days of semi closed observation (including temperature measurement and other symptoms). Students can return to normal study and life after the observation period if there is no abnormal situation during the observation period. Before the students returned to school, the dining table of Tsinghua University was partitioned. A baffle is added on the dining table to

reduce the students' infection of new crowns due to the droplets produced during meals. The school's logistics department will disinfect the restaurant every four hours to reduce the risk of transmission. Back to school students need to do nucleic acid testing in COVID-19. Regional management is carried out in the school. Students are not allowed to enter buildings other than their own. The school's Zijing code will give students access to their own department building. Students and teachers will be divided into different canteens to have a meal in order to reduce the number of diners in a single canteen. The entrance of students to and from the school is strictly controlled. Students should show the Zijing code when they enter the campus. Students must declare in advance when they leave school. The school advocates that students should reduce unnecessary going out to reduce the risk of receiving emotional pollution. The location information of students in the school will be strictly monitored to facilitate the control and tracking when the epidemic occurs.

**What kind of difficulties did you encounter during epidemic prevention? How did you and your team solve the problem?**

P: After the country opened up the domestic travel ban, the first problem my working group and I faced was the influx of a large number of people into Beijing. Many foreigners want to visit Tsinghua University. However, for the safety of the students, all groups and individuals of foreign tourism are no longer allowed to enter the campus. All tourist programs for foreign visitors have been cancelled. If the off-campus personnel need to enter the campus for academic exchange meeting or experimental needs, they must apply 24 hours in advance. The application information needs to be processed in the official system of the school. Applicants need to provide their own mobile phone number and home address to facilitate tracking after the outbreak

**As far as you know, do students strictly abide by the school's regulations and policies?**

P: As far as I know, most students will strictly abide by the school's epidemic prevention measures. But there are still a small number of students who violate the school's epidemic prevention measures because of private reasons. For example, some students will take a screenshot of their Zijing code on their mobile phones and send it to non-campus personnel to let them enter the campus. Some students leave school without reporting. In order to cope with the

situation of screenshots, Tsinghua University improved the Zijing code system, making the Zijing code become a dynamic code, and the admission permission of Bauhinia code generated by students will automatically lose validity after a period of time.

**How are the campus epidemic management and regulations formulated in Tsinghua University?**

P: I think the development of these epidemic prevention strategies to a large extent to consider the linkage between the various departments of the school. The regulation should consider whether different departments can coordinate their work.

**In the post epidemic era, what changes will Tsinghua University's epidemic prevention and control measures make?**

P: because for a long time, there has been no large-scale COVID-19 in Beijing, so many of our regulations will be released. At this stage, the management of students with masks has been relaxed a lot. Students are no longer required to wear masks in many school's public areas, such as gymnasiums or group meeting rooms. The original library was completely closed, and the gym limited the opening hours and the number of people entering every day. The gym will be open only for a specific period of time per day, and only ten people are allowed to open each time. Once Beijing finds COVID-19, the school's prevention and control measures will further upgrade and return to the most serious control (closed management).

**How about the vaccination of Tsinghua students? How many percent of the students have been vaccinated?**

P: According to my estimation, about 80% - 90% of school students have been vaccinated. Tsinghua University has organized a large-scale vaccination campaign.

**What is the dormitory arrangement for students staying in school during the epidemic period?**

P: Respondents said that during the epidemic period, all students and teachers will be concentrated in the same dormitory building and assigned rooms. There are 1-2 people in each room.

**We also have a questionnaire about the epidemic policy and the mental health of students and staff. Could you help us spread our questionnaire?**

P: Helping foreign students to send questionnaires needs the approval from school. I may not be able to help you spread the questionnaires.

**Thank you for your time.**

P: It's OK. If you have any follow-up questions, you can also ask me on WeChat. I'll try to answer your questions.

**OK, thank you.**



**What is your role at Tsinghua University? Can you tell us a little about your history and work?**

The sponsor is a professor in Tsinghua university. He is an institute of campus safety research group in Tsinghua university. He and his team are responsible to institute anything that relate to the public health issue. Also, they need to report the situation in the campus to public health agency. They create a system for Tsinghua University to help the track the students' activities inside the campus and help the school health agency to identify those students who may become a threat for the campus. Our sponsor and his team also doing some teach in the Tsinghua University about Covid 19.

**When COVID-19 is very serious in China in 2020, which city you live in and what your living conditions are like?**

Our sponsor lived in Beijing which is capital of China when the covid 19 is very serious in China. Our sponsor considered that the situation at that time was not very bad because there are not many cases in Beijing at that time. Beijing had the strictest prevention and control policies in China. In Beijing, Covid-19 only explode in several communities and all that area was under control in a very short time period.

**What is your attitude towards China's previous campus epidemic prevention measures?**

Different university have different policies about preventing and control of the spread of covid 19. The universities in Beijing probably had the highest standard of policies in the whole country. Tsinghua University have the strictest regulation rules among all the university in Beijing. After the school re-open plan active in Tsinghua University, all the students needed to report the place they went and provided a covid 19 test for those students who went to a high-risk place before. After those tests was completed, the students could get into the campus. If the students need to get out of the campus, they needed to send an application forms to the campus system and waited to be approved by the school. Also, students needed to use their id card to get into the campus. The school system can record the information about students' activities though their id card because students need to use their id card to get into the campus or other buildings

inside the campus. Most of the courses are in-person courses in Tsinghua since the reopen plan was started. In some high-risk time period such as the fall semester last year all the students need to wear a mask in the classrooms or other public places in the campus. Students cannot sit close to others and all the seats should be separate. There was a safe social distance between two students in the classroom. In the low-risk time period, students did not need to wear mask in the classroom. Also, they did not need to sit separately in the classroom in the spring semester 2021.

**Why is this project important to you and the Tsinghua University?**

Our sponsor and his teamwork with other teams in the world and try to make a standard of campus safety. His team and other teams from influential universities in the world tried to define a standard of campus safety and create a guide to help students and universities in other countries. In the past, their projects mainly focus on crime in the campus, natural disaster in the campus, chemical lab's safety in the campus and so on. Public health was not the mainly focus of their project in the past. However, since the covid-19 global pandemic appeared in last year and a lot of universities were affected, our sponsor and his team wanted to create a guide for universities about how to keep campus safety after they decided to reopen the campus. Right now, our sponsor's team is working with some universities in Asia and APRU and trying to find out some strategies to help universities in different countries to safely reopen their campus base on their own countries' situations.

China had a low infection rate and most of the universities in China did a great job in facing the treat of Covid-19. Our sponsor believed that they can bring some useful knowledge and advice for those schools that still face the challenge from covid 19. they wanted to provide some idea about the what universities should do in different situations such as high-risk area, medium-risk area and low-risk area. Although China is low risk area in the world, Beijing still follow the highest standard of prevention and control regulation. University in Beijing especially Tsinghua University can turn to the highest prevention mode immediately. Our sponsor and his team hope the experience from Tsinghua can help other universities in the world to create their own prevention and control policies to protect their students.

**What do you think is the most important point that Chinese campuses should pay attention to in preventing the spread of infectious diseases?**

Prevention and preparation for the out break of Covid. Their close relationship with local hospital.

**During the previous COVID-19 epidemic, what are the negative effects on the students, teachers and education of Tsinghua University?**

- a. Lack of social activities. Students lost a lot of chance to work and communicate with other people in the campus or study as a international exchange students during those quarantine time period.
- b. Lack of experiment experience. Experiments are very important parts of Tsinghua' s education. Students need to learn how to do experiments especially in studying stem subjects. During the quarantine time, many students lost their chance to do the experiments so this situation may affect their study career in the future.
- c. Weakness of mathematic basis for students. Our sponsor and his team find out that many student responded that they cannot understand math in online study forms. Online courses cannot provide student a high quality of math education. Tsinghua University worried about those students who were affected by this covid 19 pandemic.

**What was the infection situation of students on campus at Tsinghua University in 2020?  
Are there statistics for the remaining students and the students who have gone home?**

Not mentioned.

**During the quarantine, did you provide mental health consultation for students who might feel isolated and depressed in their home.**

Mental health consultation is very popular in Tsinghua. Many students and faculties need health consultation during the quarantine time and after the school was reopened. However, the university faced a problem about lack of faculties in working in the mental health consultation in campus. It is hard to find people who are qualified to give students or faculties mental health consultations and therapies.

**Is there anyone in the university you think we should have an interview with?**

The sponsor suggested that we shou talk to students who study in the campus. He can introduce some one to join our interview.

