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Chapter

Perspective Chapter: Prevention of COVID-19 at Our University

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Abstract

With the rapid spread of the new coronavirus, COVID-19, many universities switched to online classes to promote social distancing and reduce the risk of infection. The Ministry of Education, Culture, Sports, Science and Technology, however, requested universities hold face-to-face classes whenever possible. Therefore, after the national emergency was lifted, our university, the Kinjo University in Hakusan, launched the “Kinjo Infection Control Team” to help prevent infection on campus. Our university was one of the first universities in the Hokuriku region to resume face-to-face classes. Infection control teams were originally organized at hospitals and other medical facilities by professionals specializing in infection prevention and control. Although our university did not have an affiliated hospital, we had medical professionals, including doctors and nurses, as well as virology researchers, who conducted environmental patrols, hand hygiene education and monitoring, and infection education for students and faculty. The most important countermeasures against the spread of infectious disease in universities are the maintenance of the campus environment and the behavioral changes of students. To maintain a safe learning environment during a pandemic, it is necessary to consider the best measures to prevent infection from various aspects so that we can avoid spreading infectious diseases, and also maintain maximum student activity and provide a safe learning environment at all times.

Keywords: COVID-19, SARS-CoV-2, infection control team, prevention, university

1. Introduction

COVID-19, a viral infection caused by SARS-CoV-2, was first identified in Wuhan, China in December 2019 when a cluster of pneumonia cases was attributed to a new coronavirus [1]. Since then, it has caused a global pandemic, with 187 million cases and 4 million deaths worldwide, at the current time [2]. Though vaccination is in progress, in many countries, including Japan, the disease continues to spread, with the number of infections reaching record highs every day.

In Japan, the first COVID-19 case was detected on January 16, 2020, followed by a rapid spread of the disease. On April 7, 2020, a state of emergency was declared in seven prefectures, expanding into the whole country by 16 April as the outbreak

spread nationwide [3]. As a result, many universities started their new April semester online and held graduation and entrance ceremonies virtually. Although this social distancing helped control the spread, cluster outbreaks of the infection occurred from parties at some universities. The state of emergency was declared over at the end of May 2020, but the new coronavirus was not gone, and at this time there were many concerns about the spread of the infection.

Although virtual learning is effective, it is important for universities to also provide face-to-face classes, such as exercises, experiments, practical skills, and hands-on training for employment at hospitals and nursing homes. In order to hold in-person classes and activities safely, an on-campus team of qualified medical staff took the lead in implementing thorough infection control and launched face-to-face classes earlier than anywhere else in the Hokuriku region, located in the northwestern part of Honshu, the main island of Japan. In this chapter, we describe the infection control procedures we have been implementing at the university over the past year that have successfully allowed us to have in-person learning safely during the COVID-19 pandemic.

2. Implementation of infection control teams

An infection control team is a team that works alongside other healthcare staff and leads the control of an infection in a hospital by ensuring all measures are taken to prevent infection [4]. The team usually consists of a physician specialized in infectious diseases, laboratory technicians, nurses, pharmacists, and administrative staff. The team conducts infection rounds for environmental patrols in the hospital, as well as provides infection education to staff to prevent infection. To help prevent the spread of COVID-19, Kinjo University established its own infection control team, called Kinjo Infection Control Team, or KICT. The KICT was positioned as a subordinate organization of the infection control division (**Figure 1**). The main activities of

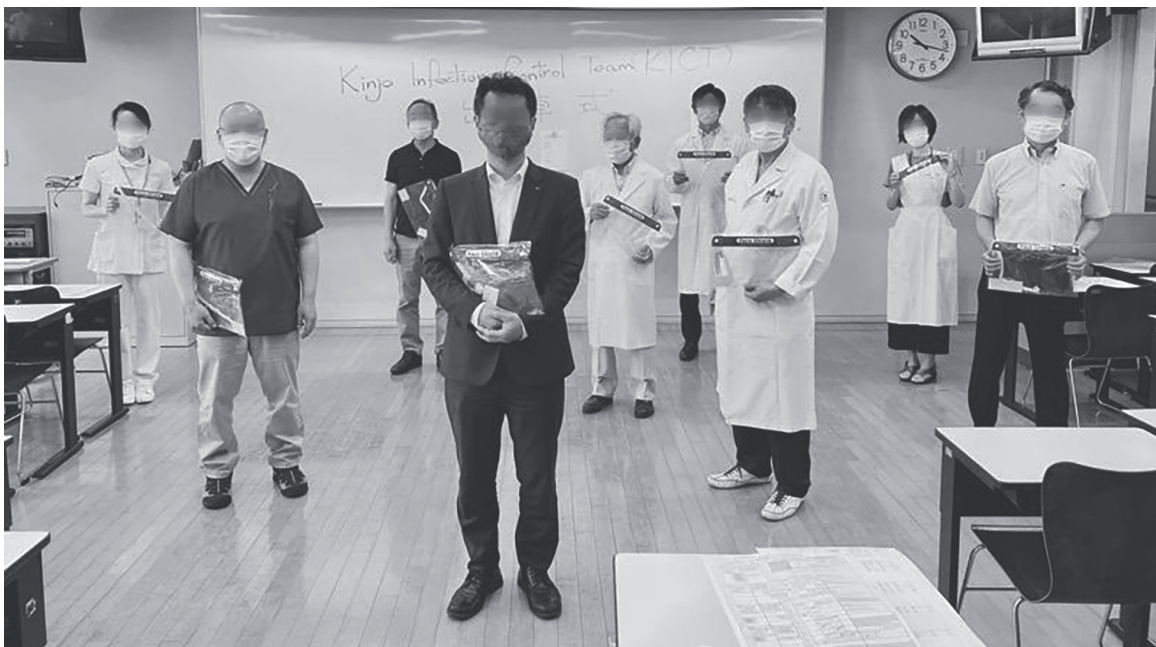


Figure 1. Kinjo Infection Control Team. Kinjo University has established such an infection control team (Kinjo Infection Control Team; KICT) and named it KICT.

- Infection rounds and environmental patrols on campus
- Infection control education for staff and students
- Questionnaire survey of students and teachers
- Hand sanitization and alcohol consumption survey
- Publication of “KICT newsletter” for raising awareness

Table 1.
Activity items by KICT.

the KICT included those described above, as well as conducting surveys of students and teachers about hand sanitization and alcohol consumption and publishing a newsletter to raise awareness about the virus (**Table 1**).

2.1 Infection rounds and environmental patrols on campus

Infection control rounds of two campuses in the city, one in the Matto district and the other in the Kasama district, were carried out to improve the environment of the facilities. These environmental improvements included changing densely packed lecture rooms to allow for more social distancing, installing and adjusting acrylic panels to prevent infection spread via respiratory fluids, installing foot-operated alcohol spray machines to kill viruses on hands, advising on how to improve ventilation in facilities, and teaching students about co-curricular activities that can be done safely (**Figure 2**).

2.2 Infection control education for staff and students

On July 3, 2020, a lecture was held as a FD/SD training session, titled “University Education in the Age of Coronaviruses—From Infection Control to a New Way of

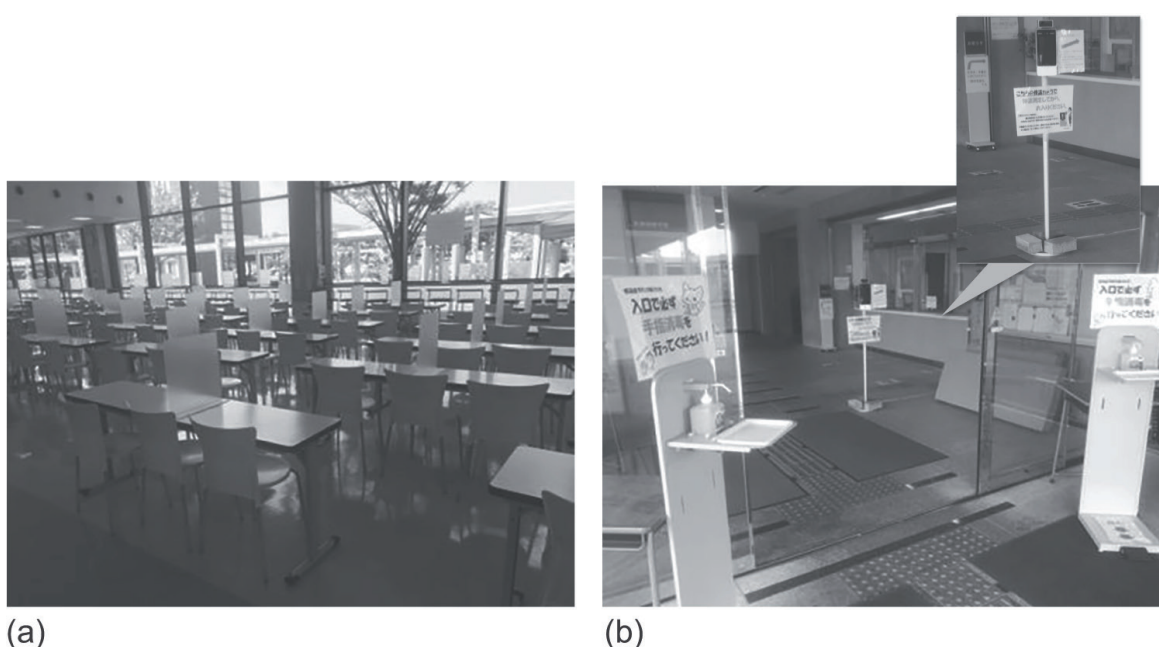


Figure 2.
Improving the environment for infection control. The acrylic panels in the student cafeterias have been installed and adjusted (a), and the foot-operated alcohol sprayer and non-contact thermometers were placed at the entrance to the campus (b).

Life”. This lecture sought to educate university faculty and staff on how to hold in-person lectures safely during the pandemic. In addition, on 23 September, a lecture on “Infectious Disease Control in the Age of Coronaviruses—GoTo New Lifestyle University” was given during second-semester orientation for all students. This lecture described lifestyle changes for students to help prevent the spread of COVID-19. Finally, at each monthly Professors Meeting and Infectious Disease Committee Meeting, information on the global infection situation, local infection situation and medical conditions, and infection control measures were made available and discussed.

2.3 Questionnaire survey of students and teachers

Questionnaires were sent to university students and faculty on a regular basis using Google forms. The content of the questionnaires varied from students’ perceptions and behaviors concerning COVID-19, to the specifics of teachers’ lectures. The results were shared with KICT members and subsequently shared with faculty and students on the university website.

2.4 Publication of the “KICT newsletter” to raise COVID-19 awareness

In addition to the publication of KICT’s activities and the results of the questionnaire surveys, a “KICT Newsletter” was also published weekly. This newsletter provided the latest information, literature, and knowledge about COVID-19, and sought to keep readers informed about the pandemic.

2.5 Hand sanitization education

Hand sanitization is one of the most basic procedures in the medical field and is highly effective at preventing the spread of COVID-19 and other diseases [5].

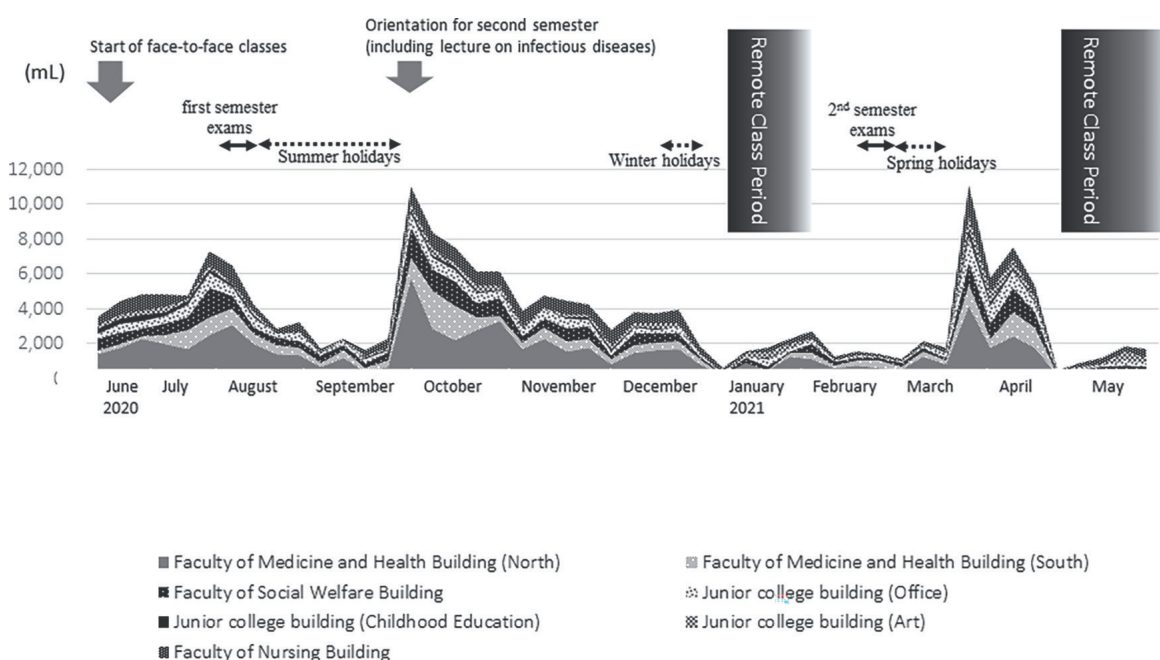


Figure 3. Alcohol consumption was monitored with the help of the Health Care Centre.



Figure 4. Coming to school and lunch time. Faculty members from each department stood at the entrance and instructed students to disinfect their hands, avoid crowding, closing spaces and close contact, and to wear masks correctly (a). They also instructed the students not to talk while eating in the student cafeteria (b).

Although alcohol disinfection machines were placed at the entrances of department buildings, students who had not previously experienced clinical practice had a low awareness of infection prevention and did not typically disinfect their hands. We examined the consumption of alcohol from alcohol disinfection machines with the help of the Health Care Centre (Figure 3). In addition to warnings by faculty in charge of student affairs, supplemental educational activities on the prevention of infection were conducted. Faculty members stood at the entrance of each department building and instructed students directly to sanitize their hands, avoid crowding, avoid closed spaces and close proximity to others, and to wear masks correctly (Figure 4). This encouraged almost all students to sanitize their hands on a daily routine and had a large impact on minimizing the spread of infection. To further raise awareness and encourage hand sanitization, in the Faculty of Nursing, students were encouraged to submit a motto for infection control, and the Dean of the Faculty awarded the best ones.

3. Online health and behavior checklist

In the age of the smartphone, it is easy for students to respond to surveys and questionnaires on online platforms, such as Google forms. The Online Health and Behavior Checklist was developed by Associate Professors, Tsuyoshi Kimura, and Akio Kamiya at our university. At 7 am each morning, an email was sent to students at the university, asking them to enter their morning temperature, physical condition, and current location. If students did not respond with this information, a warning email was sent at 10 am and again at 12 pm. The Google form responses were shared with the faculty in charge of the student's course, members of the health management center, and the infection control committee. Each individual or group then checked the responses for any health concerns in the students (Figure 5). The health management checklist sheet was launched in November 2020 in three faculties of the university. It was then expanded in late December to the junior college so that the health behavior history of students could be monitored on all campuses.

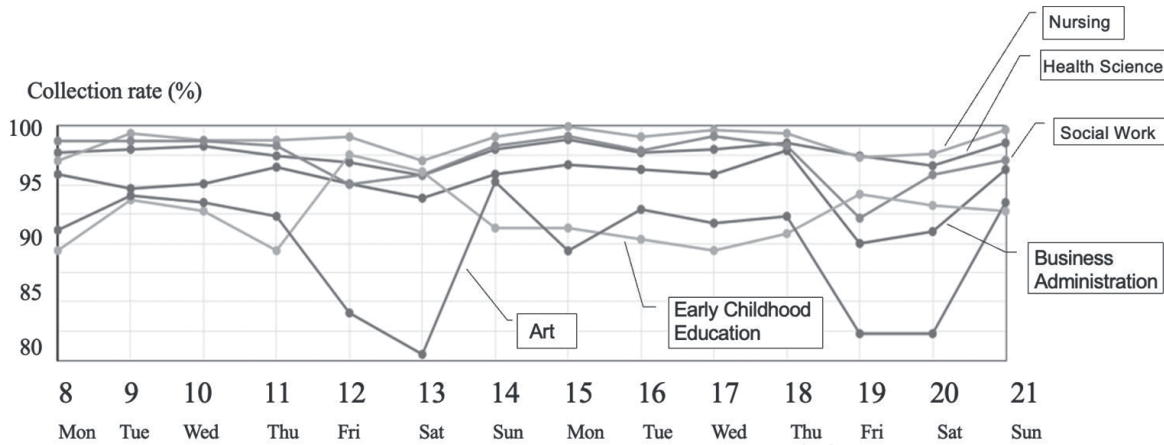


Figure 5. Online health and behavior checklist. online health and behavior checklist can be shared with your faculty member in charge of your course, members of the Health Care Centre and the Infection Control Committee.

4. Anti-corona student supporter and leader system

The student leader and supporter system for corona control were set up to encourage teaching staff and students to carry out infection control measures together. The aim of this system was to ensure that students obtain the correct knowledge and skills for infection prevention measures, manage their own health and behavior, and take appropriate action according to the current infection situation (**Figure 6**). To become a student supporter in this system, students attended a 10-hour training course. The training covered background on SARS-CoV-2, COVID-19, standard precautions to take during the pandemic, activities that are safe and preventative from COVID-19 outbreaks, and the standard infection control measures taken in hospitals and welfare facilities. Next, students participated in practical training in infection control, where they investigated the actual situation of hand hygiene and practiced infection prevention actions together with the teaching staff. Having faculty and student leaders working together was effective at preventing COVID-19 outbreaks at the university.



Figure 6. COVID-19 prevention student supporter certification ceremony. These students received 10 h of training to become supporters.

5. Vaccination for COVID-19

Vaccination is likely the most effective way of protecting against viral infection and resuming normal social activities safely [6]. In Japan, however, students from



Figure 7.
Vaccination for COVID-19. Vaccination against COVID19 was carried out for students and staff over 5 days on the campus of the Faculty of Nursing.

universities without connected hospitals have to wait until they are contacted by the municipality to get vaccinated. Public Central Hospital of Matto Ishikawa is a core hospital in the region and has had a high level of communication with our university since the establishment of the Faculty of Nursing. Last year, our university signed a comprehensive agreement with the hospital. In this agreement, a teacher from the Faculty of Nursing works for the hospital and university students visit the hospital for practical training. Additionally, vaccinations for healthcare workers and others were made available to students and staff who wished to be vaccinated (**Figure 7**). Following this, due to the promotion of professional vaccination by the government, an increasing number of universities in the consortium of universities also offered mass vaccinations for students. Having a head start allowed our university to complete the vaccination of students more quickly than any other university.

6. Conclusions

In response to the spread of COVID-19, our university set up an “Infection Control Team” and implemented thorough infection prevention within the university. Though this team was successful in preventing the spread of COVID-19 on campus, a few students became infected off-campus, by family members of healthcare workers, by attending a banquet after the coming-of-age ceremony, or by traveling during the holidays. The most important aspect of infection control in universities is the maintenance of the campus environment and changing students’ behavior. To maintain maximum in-person student activity and still provide a safe learning environment, it is necessary to consider the best infection prevention measures from all possible angles. We hope that this new coronavirus infection will be under control soon and that student life can return to normal.

Acknowledgements

We have been fortunate that no cluster of COVID-19 has occurred at Kinjo Gakuen to date (end of 2021). We would like to express our gratitude to all the faculty, staff, and students who cooperated in the infection control efforts.

Conflict of interest

The authors declare that they have no competing interests.

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