

Hospital visiting policies in the time of coronavirus disease 2019: A nationwide website survey in Taiwan

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Abstract

Background: Coronavirus disease 2019 (COVID-19), a novel infectious coronavirus disease, has become a worldwide pandemic. Infection control precautions for hospital visitors are needed to avoid cluster outbreaks, so this study investigated the visiting policies of all the hospitals in Taiwan in the time of COVID-19.

Methods: From March 15, 2020, to March 18, 2020, we searched the official websites of all 472 National Health Insurance-contracted hospitals to determine their visiting policies. For those hospitals that had posted new visiting policies and still allowed visits to ordinary wards, we recorded the relevant details shown on their websites, including the number of visitors allowed at one time, the number of visiting slots per day, the total visiting hours per day, and the rules provided to visitors before visiting.

Results: During the study period, 276 (58.5%) hospitals had posted new visiting policies on their websites, with higher proportions of academic medical centers (92.0%, 23/25) and metropolitan hospitals (91.5%, 75/82) than local community hospitals (48.8%, 178/365) doing so. Visits to ordinary wards were forbidden in 83 hospitals among those. Among the 193 hospitals that had new visiting policies and still allowed visits to ordinary wards, 73.1% (n = 141) restricted visitors to two at a time and 54.9% (n = 106) restricted visits to two visiting slots per day. Furthermore, history taking regarding travel, occupation, contacts, and cluster information was mentioned by 82.4% (n = 159) of these 193 hospitals, body temperature monitoring by 78.2% (n = 151), hand hygiene by 63.2% (n = 122), and identity checks by 51.8% (n = 100).

Conclusion: In the time of COVID-19 covered by this study, about three-fifths of the hospitals in Taiwan had posted their visiting policies for ordinary wards on their websites. Furthermore, the thoroughness with which such visiting policies have been enforced also requires investigation.

Keywords: Coronavirus; Cross-sectional studies; Health care surveys; Severe acute respiratory syndrome; Visitors to patients

1. INTRODUCTION

Coronavirus disease 2019 (COVID-19), which is a novel infectious disease caused by a new type of coronavirus, first appeared in Wuhan, China, in December 2019.¹⁻³ Owing to its rapid spread throughout different countries, the World Health Organization (WHO) characterized COVID-19 as a pandemic in March 2020.⁴ According to the COVID-19 outbreak details provided by the WHO on its website, a total of 294,110 cases

and 12,944 deaths worldwide had been confirmed as of March 23, 2020.⁵ The increasing number of confirmed cases had placed considerable stresses on medical facilities worldwide.⁶⁻⁸ In order to avoid cluster outbreaks and slow the spread of COVID-19, infection control precautions for the public, for example, precautions pertaining to hand washing, respiratory hygiene, and social distancing, were suggested by the WHO, Centers for Disease Control and Prevention (CDC) in the United States, and National Health Service (NHS) in the United Kingdom.⁹⁻¹¹

Taiwan, which is located near China, also faced various challenges from COVID-19. Surprisingly, however, fewer confirmed cases in Taiwan compared to other countries near China, such as Korea and Japan, had occurred as of March 2020.¹² One of the possible reasons for Taiwan's relatively low number of cases might be that Taiwan had learned important lessons from the epidemic of Severe Acute Respiratory Syndrome that affected Taiwan in 2003. Therefore, swift and strict infection control regulations and actions, such as those pertaining to quarantines and community surveillance, were imposed and taken by the government.¹³⁻¹⁵ Restrictions on hospital visits were also suggested by the Taiwan Centers for Disease Control (Taiwan CDC).¹⁶

In this study, we sought to investigate the hospital visiting policies of all the hospitals in Taiwan in the time of COVID-19.

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The results of this study provide solid evidence of the hospital visiting policies that were adopted under the threat of this infectious disease, including restricted visiting times and various infection control precautions for visitors. These results can help health policy makers to optimize hospital visiting policies and may lower the risk of hospital cluster outbreaks when novel infectious diseases occur.

2. METHODS

In Taiwan, the government established the National Health Insurance (NHI) system in order to provide comprehensive medical services for all of Taiwan's residents.¹⁷ Therefore, we obtained the complete lists of NHI-contracted medical facilities, which were updated on March 13, 2020, from the NHI website.¹⁸ These lists provided information on all the NHI-contracted hospitals, including the name, address, phone number, and type of each of those hospitals. The total number of NHI-contracted hospitals as of March 2020 was 472, including 25 academic medical centers, 82 metropolitan hospitals, and 365 local community hospitals.

In this study, to obtain the latest visiting policies of these hospitals in the time of COVID-19, we typed the names of all 472 hospitals into the Google search engine from March 15, 2020, to March 18, 2020, to find their official websites. We then recorded the details of the latest hospital visiting policies for ordinary wards of these hospitals by using the information provided on their official websites. We focused on the latest hospital visiting policies for ordinary wards, particular those that were updated in response to the COVID-19 pandemic. We grouped all 472 NHI-contracted hospitals into three categories (academic medical centers, metropolitan hospitals, and local community hospitals). We then browsed their official websites to determine whether or not their visiting policies for ordinary wards had been updated on their official websites. We also determined whether or not those hospitals with new visiting policies allowed visitors at all. However, the hospitals might still allow the visitors under some special situations, for example, the need to explain the clinical condition to the family, to make major medical decisions, to accompany the patient under surgery, regardless of their visiting policies. Therefore, in this study, we excluded these special situations and only discussed the visiting policies under usual situations in ordinary wards.

For those hospitals that had posted new visiting policies and still allowed visits to ordinary wards, we recorded the relevant details shown on their websites, including the number of visitors allowed at one time, the number of visiting slots per day, the total visiting hours per day, and the rules provided to visitors before visiting. We calculated the total visiting hours per day by summing the hours of each visiting slot, and we then categorized the results for total visiting hours per day into six groups (less than 1 hour, 1 hour, 1.5 hours, 2 hours, more than 2 hours, and not mentioned).

In addition, we classified the common rules provided to visitors before visiting, assuming they were mentioned on the official websites of the hospitals, into four main categories. The first category was defined as the rules pertaining to the recent travel

history, occupation, contact history, and cluster information of visitors (TOCC history). The second category was defined as the rules pertaining to the monitoring of the body temperature of visitors before they came in contact with patients, including whether such monitoring was performed by taking the body temperature of each person or by using an infrared thermal imaging system at the entrance. The third category was defined as the rules pertaining to hand hygiene, which included whether hand sanitizing was accomplished by using soap and water, by using ethyl alcohol, or by using any kind of hand sanitizer. The fourth category was defined as the rules pertaining to identity checks for visitors, including whether such checks were accomplished with identification cards (ID cards), NHI cards, or Taiwan resident certificates. We also calculated how many of the above types of rules were mentioned on the websites of the hospitals.

Descriptive statistics were generated. The computations were performed using Microsoft Excel 2019.

3. RESULTS

As shown in Table 1, 94.9% (448/472) of the 472 NHI-contracted hospitals in Taiwan had their own official websites. Every academic medical center (100.0%, 25/25) and metropolitan hospital (100%, 82/82) had an official website. However, only 93.4% (341/365) of the local community hospitals had official websites.

In the time of COVID-19 covered by this study, approximately 58.5% (276/472) of the hospitals had posted new visiting policies on their websites. Among the different types of hospitals, far higher proportions of the academic medical centers (92.0%, 23/25) and metropolitan hospitals (91.5%, 75/82) than of the local community hospitals (48.8%, 178/365) had posted new visiting policies on their websites. Overall, 40.9% (193/472) of all the hospitals explicitly still allowed visits to ordinary wards, including more than half of the academic medical centers (68.0%, 17/25) and metropolitan hospitals (64.6%, 53/82). In contrast, a lower percentage of the local community hospitals (33.7%, 123/365) still explicitly allowed visits to ordinary wards.

Among the 193 hospitals that had new visiting policies and still allowed visits to ordinary wards, most of the hospitals (73.1%, 141/193), regardless of hospital type, restricted visitors to two at a time, as shown in Table 2. However, 20.7% (40/193) of the hospitals restricted visitors to one at a time. Meanwhile, most of the hospitals (54.9%, 106/193) restricted the times for visits to two visiting slots per day.

With respect to the number of visitors allowed, the proportion of hospitals restricting visitors to two at a time was 58.8% (10/17) among the academic medical centers, 75.5% (40/53) among the metropolitan hospitals, and 74.0% (91/123) among the local community hospitals. However, a higher proportion of hospital restricting the times for visits to one visiting slot was noted among the academic medical centers (70.6%, 12/17) compared to the metropolitan hospitals (37.7%, 20/53) and local community hospitals (30.9%, 38/123).

Table 1
Basic information of all 472 hospitals in Taiwan

	Academic medical center (% n = 25)	Metropolitan hospital (% n = 82)	Local community hospital (% n = 365)	Total (% n = 472)
Official websites	25 (100.0)	82 (100.0)	341 (93.4)	448 (94.9)
New visiting policies on the websites	23 (92.0)	75 (91.5)	178 (48.8)	276 (58.5)
Visits to ordinary wards still allowed	17 (68.0)	53 (64.6)	123 (33.7)	193 (40.9)

Table 2**Limits on visits to ordinary wards in Taiwan**

	Academic medical center (% n = 17)	Metropolitan hospital (% n = 53)	Local community hospital (% n = 123)	Total (% n = 193)
Limit on number of visitors at one time				
One visitor	7 (41.2)	13 (24.5)	20 (16.3)	40 (20.7)
Two visitors	10 (58.8)	40 (75.5)	91 (74.0)	141 (73.1)
Not mentioned	0	0	12 (9.8)	12 (6.2)
Limit on number of visiting slots per day				
One visiting slot	12 (70.6)	20 (37.7)	38 (30.9)	70 (36.3)
Two visiting slots	5 (29.4)	32 (60.4)	69 (56.1)	106 (54.9)
Three visiting slots	0	1 (1.9)	9 (7.3)	10 (5.2)
Four visiting slots	0	0	1 (0.8)	1 (0.5)
Not mentioned	0	0	6 (4.9)	6 (3.1)
Total visiting hours per day				
<1 h	0	1 (1.9)	4 (3.3)	5 (2.6)
1 h	12 (70.6)	13 (24.5)	30 (24.4)	55 (28.5)
1.5 h	0	0	3 (2.4)	3 (1.6)
2 h	5 (29.4)	33 (62.3)	53 (43.1)	91 (47.2)
>2 h	0	6 (11.3)	26 (21.1)	32 (16.6)
Not mentioned	0	0	7 (5.7)	7 (3.6)

The largest percentage of all the hospitals (47.2%, 91/193) set 2 hours as their total visiting hours per day, including the largest percentages of the metropolitan hospitals (62.3%, 33/53) and local community hospitals (43.1%, 53/123). However, among the academic medical centers, the largest percentage (70.6%, 12/17) set only 1 hour as their total visiting hours per day.

As shown in Table 3, 82.4% (159/193) of these 193 hospitals mentioned TOCC history taking, 78.2% (151/193) mentioned body temperature monitoring, 63.2% (122/193) mentioned hand hygiene, and 51.8% (100/193) mentioned identity checks. Relatedly, 13.0% (25/193) of the hospitals specified one of these types of rules on their websites, 19.7% (38/193) specified two of these types of rules, 37.8% (73/193) specified three of these types of rules, 27.5% (53/193) specified all four of these types of rules, and 2.1% (4/193) did not mention any of these types of rules.

4. DISCUSSION

The results of this study provide an overview of the hospital visiting policies for ordinary wards in all 472 NHI-contracted hospitals in Taiwan. In the time of COVID-19 covered by this

study, more than half of the 472 hospitals (58.5%, 276/472) had updated their new visiting policies on their websites, with the vast majorities of the academic medical centers and metropolitan hospitals having done so. Moreover, 40.9% (193/472) of all of the hospitals still explicitly allowed visits to ordinary wards.

Among the hospitals that had posted new visiting policies on their official websites and still allowed visits to ordinary wards, most restricted visitors to two at a time (73.1%, 141/193) and restricted visits to two visiting slots per day (54.9%, 106/193). More than half of these hospitals also mentioned infection control measures for visitors, including rules regarding TOCC history taking, body temperature monitoring, hand hygiene, and identity checks.

In Taiwan, most hospitals have their own official websites that can be updated with news or policy changes, including every academic medical center and metropolitan hospital. Furthermore, most of the academic medical centers and metropolitan hospitals had updated their visiting policies and mentioned detailed precautions, including those relating to the number of visitors allowed, visiting slots per day, and rules for visitors, on their websites. However, two of the academic medical centers publicized their new hospital visiting policies via

Table 3**Rules for visitors to ordinary wards in Taiwan**

	Academic medical center (% n = 17)	Metropolitan hospital (% n = 53)	Local community hospital (% n = 123)	Total (% n = 193)
Visitor rules				
TOCC history ^a	17 (100.0)	45 (84.9)	97 (78.9)	159 (82.4)
Body temperature	15 (88.2)	39 (73.6)	97 (78.9)	151 (78.2)
Hand hygiene	9 (52.9)	32 (60.4)	81 (65.9)	122 (63.2)
Identity checks ^b	15 (88.2)	34 (64.2)	51 (41.5)	100 (51.8)
Number of different types of rules				
1	0	5 (9.4)	20 (16.3)	25 (13.0)
2	2 (11.8)	11 (20.8)	25 (20.3)	38 (19.7)
3	8 (47.1)	21 (39.6)	44 (35.8)	73 (37.8)
4	7 (41.2)	15 (28.3)	31 (25.2)	53 (27.5)
Not mentioned	0	1 (1.9)	3 (2.4)	4 (2.1)

^aTOCC history rules were defined as rules pertaining to recent travel history, occupation, contact history, and cluster information of visitors.

^bIdentity check rules for visitors included those requiring checks of identification cards (ID cards), NHI cards, or Taiwan resident certificates.

television news programs instead of providing on their websites. Meanwhile, somewhat different conditions were found among the local community hospitals. Many of the local community hospitals had not updated their websites in response to the pandemic. However, these hospitals might have promoted any new policies via television news programs, via social media like Facebook pages,¹⁹ or via announcements posted at their physical entrances.

In the time of COVID-19, the government of Taiwan and many hospitals have encouraged visitors to make remote visits, such as visits through Facetime and Skype, instead of on-site visits in hospitals. Visitors have even been forbidden in some hospitals, including most maternal and children's hospitals. Among the hospitals that still explicitly allowed visits to ordinary wards, most restricted visitors to two at a time and restricted visits to two visiting slots per day, consistent with the recommendations of the Taiwan CDC.¹⁶ These policies of restricted hospital visits are also similar to those for French intensive care units.²⁰

Otherwise, the infection control precautions for visitors are very important.^{21–23} Since the government of Taiwan issued the rule that people need to put on a mask when entering any medical facility,²⁴ we assumed that all the people in Taiwan knew the rule, including visitors. Most of the hospitals also mentioned other common infection control measures for visitors, including rules pertaining to TOCC history taking, body temperature monitoring, hand hygiene, and identity checks. Some hospitals placed automatic hand sanitizer dispensers and infrared thermal imaging systems at their entrances to help visitors follow the rules, while some even developed their own reservations systems for visits, such as systems using mobile applications and Google forms, in order to save time on history taking for and recording information about visitors. In addition, to prevent people from hiding their travel histories, the government has made it possible for medical staff to access the travel records of people through their NHI cards.²⁵ That said, the thoroughness with which the visiting policies of hospitals have been enforced requires further investigation.

This study had some limitations. First of all, we obtained the information on visiting policies only from the official websites of the hospitals in Taiwan. Nearly two-fifths of the hospitals, primarily local community hospitals, did not have their own official websites or had not updated the information on their websites. Instead, they may have disseminated any updated policies through the news media, by posting them on social media sites like Facebook pages, or by placing notices at their physical entrances. As such, this study may have underestimated the total number of hospitals that made changes to their visiting policies. Moreover, the thoroughness with which hospital visiting policies have actually been enforced by the hospitals requires further investigation. Second, hospitals might change their visiting policies with the evolution of COVID-19. Besides, a local government might announce a stricter policy covering all hospitals within its administrative area. The temporal and regional differences could hardly be taken into consideration in our cross-sectional study. Third, we described the hospital visiting policies for ordinary wards in all of the hospitals in Taiwan. However, the visiting policies for special wards, for example, intensive care units, coronary care unit, baby rooms, were not included in this study. Therefore, the differences between the visiting policies for ordinary wards and special wards requires further study.^{26–28}

In conclusion, about three-fifths of the hospitals in Taiwan had posted their visiting policies for ordinary wards on their websites in the time of COVID-19 covered by this study. Furthermore, the thoroughness with which such visiting policies have been enforced also requires investigation.

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