Challenges of using body bags for COVID-19 deaths from the healthcare provider perspective – a qualitative study

Mayumi Toyama, Hiroko Mori, Akira Kuriyama, Makiko Sano, Haruki Imura, Mayumi Nishimura, Takeo Nakayama

ABSTRACT

Background During the COVID-19 pandemic, numerous issues regarding end-of-life care for COVID-19 patients have been discussed. Among these issues, challenges related to the use of body bags following the death of COVID-19 patients have been suggested. This study aimed to identify the challenges faced by healthcare professionals (HCPs) when using body bags after the death of patients infected with COVID-19 in medical settings.

Methods We conducted a qualitative descriptive study with semistructured in-depth interviews using inductive thematic analysis. From August to December 2021, we interviewed nurses and doctors who provided end-of-life care to COVID-19 patients focusing on their experiences with the use of body bags for the deceased.

Results Of the 25 interviewees who mentioned body bag use, 14 were nurses (56%) and 13 were women (52%). The mean interview length was 52.0 min (SD 9.6 min). Challenges associated with body bag use were classified into four themes with eight categories: preserving the dignity of the deceased, consideration for the bereaved saying a final goodbye to a loved one in a body bag, the physical and emotional impact on HCPs, and diverse opinions on body bag use.

Conclusion Our findings include ethical concerns about the dignity of the deceased, empathy for the grief of bereaved families, and the physical and emotional distress of struggling with body bag use by HCPs. We recommend that developers of body bag guidelines consider ethical perspectives in designing guidelines and policies.

INTRODUCTION

During the COVID-19 pandemic, many difficulties arose not only concerning patients and their families but also for healthcare professionals (HCPs) and facilities in providing end-of-life care for COVID-19 patients. Infectious disease control measures led to visiting restrictions that caused separation between patients and families, limited care by HCPs, communication difficulties between patients, their families and HCPs, and patient isolation. It has been suggested that the high workload for HCPs affected the quality of end-of-life care, prioritising urgent physical care over emotional, social and spiritual aspects.

The management of bodies after COVID-19 deaths also emerged as a significant social issue during the pandemic. Among these issues, challenges related to the use of body bags following the death of COVID-19 patients have been suggested. In Japan, the media reported that bereaved families could not say their final goodbyes to COVID-19 patients or see the faces of the deceased in body bags; however, the media did not address ethical concerns. Challenges associated with the use of body bags following the death of COVID-19 patients reveal ethical concerns about the dignity of the deceased, empathy for grieving families, and the physical and emotional distress of struggling with the use of body bags based on limited evidence.
person, with some reports highlighting families’ inability to view the faces of loved ones placed in body bags. Some studies suggest that the use of body bags caused distress to families who saw their loved ones in body bags.30

There was a wide variety of guidelines and guidance regarding the management of bodies from COVID-19 deaths. While some guidelines allowed families to see their deceased loved ones without limitations, others required all possible precautions to be taken.21 The WHO guideline of March 202022 stated, ‘Body bags are not necessary, although they may be used for other reasons (eg, excessive body fluid leakage)’, and the guideline of September 202023 updated, ‘Do not use body bags, unless they are recommended by standard mortuary practice’, such as ‘when there is excessive fluid leakage’ or ‘for postautopsy procedures’. In contrast, Japan’s guidelines of July 2020 ‘recommended’ body bag use for all COVID-19 deaths until January 2023.24 25 Concerning this diversity in the content of guidelines and guidance, Yaacoub et al indicated that although many guidelines suggest specific strategies for managing corpses, no studies have provided direct evidence supporting the adoption of these strategies.26 Despite the limited evidence regarding the use of body bags for COVID-19 patients, a significant negative impact of their use can be inferred. However, the challenges associated with using body bags in medical settings during the COVID-19 pandemic seem to have been largely overlooked.

This study aims to identify the experiences and challenges of HCPs when using body bags for deceased COVID-19 patients in hospitals during the pandemic. Based on our findings, we propose considerations that should be incorporated into the updating of guidelines/guidance for the management of deceased COVID-19 patients in medical settings.

METHODS

Study design

We conducted a qualitative descriptive study using in-depth, semistructured interviews with inductive thematic analysis that focused on the experiences of HCPs who used body bags while COVID-19 patients.27–29

The design was appropriate for describing the informants’ experiences in a language similar to their own.30 This study is a part of a comprehensive research project exploring HCPs’ experiences of COVID-19 patients, which is termed the PRECA-C (Providing end-of-life care for COVID-19) study.18 This study was reported in accordance with the consolidated criteria for reporting qualitative research reporting guidelines.31 32 In addition, we verified trustworthiness in our qualitative research by employing four rigour criteria: credibility, transferability, dependability and confirmability.28 33–36

To increase the credibility, three researchers cross-referenced preliminary findings with archived raw data (referential adequacy), and the inquiry process underwent external scrutiny through peer debriefing. To ensure data transferability, we conducted purposive sampling for thick descriptions. All interviews were recorded, field notes were taken both during and after the interviews, and an audit was also conducted during data analysis to ensure dependability. For confirmability, the validity of data interpretation was discussed with the research team to triangulate the results (online supplemental appendix 1. The trustworthiness of qualitative research and strategies applied in our study).

SETTING/SAMPLING

From August to December 2021, we recruited nurses and doctors who had provided end-of-life care to COVID-19 patients in intensive care units, COVID-19-specialised wards or general wards for all regions in Japan.

We performed maximum variation sampling (a type of purposive sampling), which samples for heterogeneity.37

First, with the cooperation of a network of researchers at Kyoto University School of Public Health, we sent emails to the members to invite them to participate in this survey. Subsequently, three gatekeepers of the members introduced their clinical colleagues, considering their circumstances and burdens. We approached potential participants through these gatekeepers to ensure diversity in terms of age, gender, region and hospital size by purposive sampling strategies.

HCPs with psychiatric symptoms such as depression or those who might feel distressed when recalling their experiences were excluded. Candidates received an email with detailed descriptions of the study. They were asked to read the study description, including an agreement on video and/or audio recording, and to provide consent electronically if willing to participate.

DATA COLLECTION

Before beginning the PRECA-C study,18 we conducted a pilot study with two infectious disease physicians. An interview guide that included key questions such as, ‘What kind of end-of-life care did you provide to dying COVID-19 patients and their families?’ and ‘How did you feel as a medical professional after experiencing the end-of-life care of coronavirus patients?’ was developed through a pilot study (online supplemental appendix 2. Interview guide). At that point, we had not noticed HCPs’ concerns associated with the use of body bags for COVID-19 deaths. Three researchers (MT, female, a medical doctor; MN, female, an occupational therapist; and MS, female, a nurse) conducted personal, closed, semistructured interviews in Japanese using a videoconferencing system. These interviewers had received training from an experienced researcher (HM, female, an academic researcher). After primary study started and conducted 10 interviews, we noticed that the participants had strong concerns about the use of body bags. To better understand how HCPs felt about body bags, all participants, except those who had voluntarily talked about body bags, were asked a neutral probing question such as ‘What do you think
about body bag use?'. Thirty of the 33 participants had not met the interviewers before the study.

**Data analysis**
We used inductive thematic analysis because it is suitable for problem identification and hypothesis generation.\(^3^8\) The following steps were taken to analyse the data. First, the researchers familiarised themselves with the transcribed data through multiple readings. Subsequently, two independent researchers (MT and HM) inductively coded the data transcribed from the recorded interviews using thematic analysis.\(^2^8\) MT and HM created a codebook independently and referenced to each other. They combined similar codes and generated categories and themes through multiple discussions until consensus was reached. MN reviewed the transcripts to ensure that no new codes could be identified. The analysis was conducted during sampling and interviewing. Once no new codes were generated, three more interviews were conducted to confirm that no new codes emerged, and data saturation was confirmed.\(^3^9\) To triangulate the results, the validity of data interpretation, categorisation and labelling was discussed with the research team, including two clinicians who treated COVID-19 patients. Then, the results of the final analysis were derived. After conducting the analysis in Japanese, we asked a specialised company to translate the codebook into English. The authors further back-translated the English version and repeatedly discussed the precision of the translation. To avoid further burden on participants in the midst of the pandemic, we decided not to return the transcripts to them for member checking and not to provide feedback on the findings. The data were analysed by using NVivo V.12 (QSR International).

**RESULTS**
Of the 37 persons recruited for the PRECA-C study, 1 withdrew due to scheduling conflicts, and 3 others did not reply to our email within the recruitment period. In total, 33 interviews were conducted, and 25 respondents mentioned body bags (table 1). Fourteen participants (56%) were nurses, 13 (52%) were women and 20 (80%) were ≥30 years of age. The mean interview length was 52.0 min (SD 9.6 min), and one person was interviewed twice due to a restricted time schedule. The characteristics of eight persons who did not mention body bags are as follows: five were doctors (63%), six were men (75%) and six were ≥30 years of age.

The challenges associated with the use of body bags for deceased COVID-19 patients were classified into the following four themes, which in turn spanned eight categories: preserving the dignity of the deceased, consideration for the bereaved saying a final goodbye to a loved one in a body bag, physical and emotional impact on HCPs, and diverse opinions on body bag use (table 2).

**Table 1** Characteristics of the participants and their hospitals

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>No</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants (n=25)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered nurse</td>
<td>14</td>
<td>(56)</td>
</tr>
<tr>
<td>Medical doctor</td>
<td>11</td>
<td>(44)</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
<td>(52)</td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
<td>(48)</td>
</tr>
<tr>
<td>Age range, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–29</td>
<td>5</td>
<td>(20)</td>
</tr>
<tr>
<td>30–39</td>
<td>11</td>
<td>(44)</td>
</tr>
<tr>
<td>40–49</td>
<td>8</td>
<td>(32)</td>
</tr>
<tr>
<td>50–59</td>
<td>1</td>
<td>(4)</td>
</tr>
<tr>
<td>Workspace</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensive care unit</td>
<td>7</td>
<td>(28)</td>
</tr>
<tr>
<td>Emergency department</td>
<td>5</td>
<td>(20)</td>
</tr>
<tr>
<td>High care unit</td>
<td>3</td>
<td>(12)</td>
</tr>
<tr>
<td>Specialised COVID-19 ward</td>
<td>10</td>
<td>(40)</td>
</tr>
<tr>
<td>Hospital (n=19)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hokkaido</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Yamagata</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Chiba</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Tokyo</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Kyoto</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Osaka</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hyogo</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Nara</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Wakayama</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Okayama</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Hiroshima</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Okinawa</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>No of beds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥1000</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>800–999</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>600–799</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>400–599</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>200–399</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>&lt;200</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>No of available beds for patients with COVID-19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥30</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>20–29</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10–19</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1–9</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Unknown*</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

*Two participants did not know the maximum number of beds in their hospitals for patients with COVID-19 because they had moved to different hospitals before the interview.

**Theme: preserving the dignity of the deceased**
The interviewed HCPs expressed strong concerns that the use of body bags violated the dignity of those who...
Table 2  Themes and categories, with illustrative quotations

<table>
<thead>
<tr>
<th>Theme/categories</th>
<th>Illustrative quotations (participant's age, sex, profession)</th>
</tr>
</thead>
</table>
| Preserving the dignity of the deceased               | 'When placing a patient in the black bag, although they were a person, it didn’t even look like a person was inside, and I couldn’t do anything other than feel sorry...They may just look trash.'  
(20s, female, nurse)  
'Something that looks like a vinyl bag...it just doesn’t look right.'  
(30s, male, nurse)  
'When we can’t even see the face of the person, it feels like they are not being treated as a human being.'  
(40s, female, nurse)  
'It was transparent, so we could see the face to some extent, or maybe we could identify the patient from their shape'  
(40s, female, nurse)  
'We pushed the zipper aside so that it wouldn’t strike the patient’s face and the face could be seen'  
(40s, female, nurse). |
| Discomfort with body bag specifications              | 'Basically, all tubes and such that had been inserted were left...there was no care at all, or not much care.'  
(30s, male, nurse)  
'We were packing them in body bags, and given that these were their last moments, we wanted to provide loving care...we wanted to intervene, just by wiping the face...Well, to tell the truth, treating the dead body like garbage, you know...when the outbreak occurred, we did think that.'  
(20s, male, nurse)  
'Because it got cloudy after a while I opened it before that and wiped the person’s face...I was careful.'  
(20s, female, nurse) |
| Abbreviated death care                               | 'The viewing could only be done through a body bag. I just wondered if there wasn’t a better way to do this.'  
(20s, female, nurse)  
'There were so many family members who cried the most when they saw their loved one in such a state.'  
(40s, female, nurse )  
'Regarding the person in the bag, we felt that their family members would find this very painful.'  
(20s, female, nurse) |
| Consideration for the bereaved saying a final goodbye to a loved one in a body bag | 'They didn’t get to see them at the end, no matter what the circumstances were...We should let the family see them one last time. To see them or not was the family’s decision, and our job was to provide a place to do so.'  
(40s, female, nurse )  
'During the first wave, touching was definitely not allowed, but later, as things started getting better, it was alright to touch from the outside of the body bag.'  
(30s, female, doctor) |
| Empathy to family distress at seeing a loved one in a body bag | 'Every time we had to place a dead body into a bag, it was very tough. If something similar happens in the future...I think it will be just as painful'.  
(40s, female, nurse)  
'Of course, placing the dead bodies in body bags was difficult, we had to ask for help to place bodies in body bags. Four or five people could handle it. At our hospital, the medical clerks don’t encounter death or people dying. So asking them to help with this kind of work, well, we felt very bad.'  
(50s, female, nurse) |
| Importance of family having one last look at their deceased loved one | 'It was the first time that we had to place dead people into body bags, and we were very resistant'.  
(50s, female, nurse)  
'I knew the body inside the bag was a person, but I felt as if it wasn’t even human, and there was nothing I could do besides saying that I was sorry.'  
(20s, female, nurse).  
'The job of us having to place dead people in body bags started with COVID.'  
(30s, male, nurse)  
'In case of accidents, etc., we’ve seen police officers placing dead bodies in body bags, but we never thought that we would be doing it. Well, it’s an indescribable feeling.'  
(40s, female, nurse) |
| Physical and emotional impact on HCPs                 | 'When placing a patient in the black bag, although they were a person, it didn’t even look like a person was inside, and I couldn’t do anything other than feel sorry...They may just look trash.'  
(20s, female, nurse)  
'Something that looks like a vinyl bag...it just doesn’t look right.'  
(30s, male, nurse)  
'When we can’t even see the face of the person, it feels like they are not being treated as a human being.'  
(40s, female, nurse)  
'It was transparent, so we could see the face to some extent, or maybe we could identify the patient from their shape'  
(40s, female, nurse)  
'We pushed the zipper aside so that it wouldn’t strike the patient’s face and the face could be seen'  
(40s, female, nurse). |
| Burden of using body bags                             | 'Basically, all tubes and such that had been inserted were left...there was no care at all, or not much care.'  
(30s, male, nurse)  
'We were packing them in body bags, and given that these were their last moments, we wanted to provide loving care...we wanted to intervene, just by wiping the face...Well, to tell the truth, treating the dead body like garbage, you know...when the outbreak occurred, we did think that.'  
(20s, male, nurse)  
'Because it got cloudy after a while I opened it before that and wiped the person’s face...I was careful.'  
(20s, female, nurse) |
| Shock of seeing a body bag                            | 'The viewing could only be done through a body bag. I just wondered if there wasn’t a better way to do this.'  
(20s, female, nurse)  
'There were so many family members who cried the most when they saw their loved one in such a state.'  
(40s, female, nurse )  
'Regarding the person in the bag, we felt that their family members would find this very painful.'  
(20s, female, nurse) |
| Diverse opinions on body bag use                      | 'They didn’t get to see them at the end, no matter what the circumstances were...We should let the family see them one last time. To see them or not was the family’s decision, and our job was to provide a place to do so.'  
(40s, female, nurse )  
'During the first wave, touching was definitely not allowed, but later, as things started getting better, it was alright to touch from the outside of the body bag.'  
(30s, female, doctor) |

Continued
had died of COVID-19. In particular, they were uncomfortable with the body bag specifications.

**Discomfort with body bag specifications**

HCPs felt that the colour, shape and material of the body bags were similar to those of garbage bags. The bags were made of vinyl, and their colours were black, white or transparent. Black body bags were particularly unpopular: ‘It didn’t even look like a person was inside’ (20s, female, nurse). Transparency was important since it allowed recognition of the patient’s face and body: ‘It was transparent, so we could see the face to some extent, or maybe we could identify the patient from their shape’ (40s, female, nurse). If the body bag zipper was directly above the face of the deceased, some HCPs attempted to improve this situation: ‘We pushed the zipper aside so that it wouldn’t strike the patient’s face and the face could be seen’ (40s, female, nurse).

**Abbreviated death care**

One HCP described placing the deceased in a body bag with only abbreviated death care as ‘treating the dead body like garbage’ (20s, male, nurse). Even under such situations, several HCPs noted that they were attentive to the body’s condition even after it had been placed in the body bag.

**Theme: consideration for the bereaved saying a final goodbye to a loved one in a body bag**

Empathy toward family distress at seeing a loved one in a body bag

The HCPs were concerned about the psychological impact on families of seeing the patient in a body bag at the first visit after death: ‘The viewing could only be done through a body bag. I just wondered if there wasn’t a better way to do this’ (20s, female, nurse). Several family members stated that they felt awkward saying goodbye to someone in a body bag. In most hospitals, family visits were restricted or prohibited even at the end of the patient’s life. HCPs struggled to create opportunities for families to say their final goodbyes after a COVID-19 patient’s death. In some cases, the hospital sent their bodies directly to funeral homes in body bags without giving families an opportunity to see the patient after death.

**Importance of family having one last look at their deceased loved one**

One HCP noted that some families were happy just to see the patient, even for a moment and even in a body bag, because early in the pandemic, some media outlets had reported that visitations were forbidden even after death.

**Theme: physical and emotional impact on HCPs**

Some HCPs handled body bags for the first time in their careers. It was not only unnerving to see body bags, but handling them also entailed a substantial physical burden.

**Burden of using body bags**

The use of body bags added to HCPs’ physical burden. Placing a deceased patient into a body bag was a painstaking process. The scarcity of available staff forced nurses to place the deceased into body bags without any assistance: ‘Every time we had to place a dead body into a bag, it was very tough. If something similar happens in the future…I think it will be just as painful’ (40s, female, nurse). Occasionally, HCPs asked for assistance from other departments, but doing so also brought an emotional burden: ‘We had to ask for help to place bodies in body bags. Four or five people could handle it. At our hospital, medical clerks don’t encounter death or dying people. So asking them to help with this kind of work, well, we felt very bad’ (50s, female, nurse).

**Shock of seeing a body bag**

HCPs were stunned to see body bags for the first time and shocked at the need to place their patient in them. They were strongly discomforted by the mere sight of a body in a bag. Others expressed psychological reluctance, emotional pain and remorse: ‘It was the first time that we had to place dead people into body bags, and we were very resistant’ (50s, female, nurse).
Theme: diverse opinions on body bag use
Interviewees expressed a range of opinions on the need for body bags and the criteria needed for adaptation.

Necessity of body bags
Some HCPs were sceptical about the need for body bags. They believed that droplet infection from a dead body was theoretically unlikely: ‘The dead are not going to cough or sneeze, so no aerosols will be generated’ (40s, male, doctor). Others feared that the potential for COVID-19 transmission via contact with the corpse was undeniable: ‘There may still be a risk of infection’ (30s, male, doctor).

Criteria for body bag use
One HCP mentioned that body bags had been used in deaths that were not directly due to COVID-19. Having once been diagnosed with COVID-19 meant that even if the patient died from post-COVID-19 complications rather than an active infection, the current guidelines/guidance dictated body bag use: ‘A number of patients were placed in body bags even though they were no longer actively infected with COVID-19’ (30s, male, nurse).

DISCUSSION
We interviewed HCPs who provided end-of-life care to COVID-19 patients in Japanese hospitals. Most of them expressed concerns that using body bags for patients who had died of COVID-19 compromised patients’ dignity. They also empathised with family distress at seeing a loved one in a body bag. HCPs who had never used body bags experienced a considerable emotional and physical burden. Some questioned the necessity of using body bags for a COVID-19 death or the presence of valid evidence.

Challenges of body bag use for COVID-19 patients
The interviews revealed concerns about disregarding the dignity of the dead, such as the perceived resemblance of body bags to garbage bags. The HCPs spoke out against the black/vinyl material and how faces were covered, arguing these shrouds were inappropriate for the deceased. The study participants repeatedly stressed how important it was for families to see the faces of the deceased and mentioned how seeing their loved ones in body bags pained the bereaved families.

In addition to prioritising the safety of HCPs and all interested parties, corpse management must respect the dignity of the dead and their loved ones throughout death care as part of the continuum of medical care. To support the grieving process, bereaved family members should be allowed to spend as much time as possible with the deceased. However, similar to a previous study, the bereaved families were distressed by seeing their loved ones in body bags. By creating more ethically and culturally conscious body bags, including the choice of colour, shape and material, the emotional burden of all concerned would be reduced. If conventional body bags must be used, measures to ease the impact on bereaved families’ emotions at the very least must be considered. It is worth considering allowing families to visit the deceased before they are placed in a body bag by having families take standard precautions against infection, such as the use of personal protective equipment. There was variation in hospital policies concerning visits to COVID-19 patients before and after their death. It is essential to explore ethically and socially appropriate approaches in each situation and setting.

Objectives of body bag use in COVID-19 patients
Most HCPs in our study used body bags for the first time during this pandemic. While they followed Japan’s governmental guidelines and local government directives regarding the use of body bags, some participants remained sceptical about the necessity of body bags.

Body bags are generally used during disasters. In such situations, many unidentified deceased patients require care, and their bodies may be damaged or bodily fluids may leak. Body bags play a vital role in ensuring an appropriate widespread response in rapid discovery, collection, transportation, housing, documentation, testing, identification and release to families of the deceased. However, the functions of body bags during a disaster differ from those after an individual COVID-19 death in a hospital. In most cases, patients were identified, their families were contacted, and the patient had died in a hospital bed after receiving medical care. During cluster outbreaks, some hospitals were compelled to temporarily store multiple bodies in hospital rooms. Even so, the primary purpose of using body bags for COVID-19 fatalities was to prevent transmission through contact with the deceased. The specifications for body bags, designed to facilitate the collection and transfer of many bodies during a disaster, are typically not necessary for managing COVID-19 fatalities in hospital. In the early phase of the current pandemic, the media reported a shortage of body bags. By proposing a simplified body bag designed to meet the specific demands of the situation, we could avert such shortages in the future. Furthermore, the need for body bags in the medical settings should be evaluated early. During the initial stages of the pandemic when sufficient evidence is lacking, infection control measures were a crucial priority. However, guidelines and guidance should be updated promptly to reflect a comprehensive perspective.

Who are the stakeholders in corpse management?
The HCPs in this study raised fundamental yet crucial concerns regarding the utilisation of body bags in medical environments, including a valuable perspective from the family’s point of view derived from observing families.

In formulating policy during the pandemic, policymakers selected only expert advisors and overlooked those with expertise rooted in lived experience. Interventions outlined in the guidelines/guidance must be feasible and acceptable in the field. Furthermore, stakeholder engagement is a crucial element in the formulation and implementation of guidelines.
addition to families, communities and funeral homes, HCPs should be recognised as key stakeholders. Previous studies have emphasised the extreme stress and challenges faced by HCPs treating COVID-19 patients during the pandemic.\(^ {46-51}\) The additional burden of end-of-life care for patients could be one of the factors pushing the healthcare system toward collapse.

Our findings include ethical concerns about the dignity of the deceased, empathy for the grief of bereaved families, and the emotional and physical distress experienced by HCPs struggling with the recommendation to use body bags based on limited evidence. Some of these were identified in previous disasters and pandemics.\(^ {40, 42}\) Additionally, we discovered challenges specific to the COVID-19 pandemic, such as how body bag use, with recommendations based on limited evidence, might add to the emotional and physical distress of already overburdened HCPs.

To prepare for future pandemics, we must institute planning that incorporates corpse management and considers related ethical aspects.\(^ {29}\) During the beginning stages of the approach, guideline/guidance developers must listen to stakeholders and address their diverse views to identify potential issues in each country/region/community, aiming to create better guidelines/guidance. This study will provide further insight into the use of body bags for COVID-19 patients and encourage guideline/guidance developers or policymakers to consider the perspectives of each individual affected by their use.

LIMITATIONS

Since this study was conducted in Japan, country-specific factors, such as the local COVID-19 pandemic status at the time of the interviews, Japan’s medical system and cultural profile, may have impacted our findings. As backgrounds differ by nation, region and community, perceptions of body bags may vary as well. In this study, doctors and nurses who used body bags following the deaths of COVID-19 patients were interviewed. Family members, other hospital staff or funeral home staff may be able to provide further insight into additional issues associated with the use of body bags.

CONCLUSION

Appropriate and acceptable corpse management calls for a heightened level of consciousness to maintain the dignity of the deceased while mitigating the adverse impact of body bag use on both bereaved families and HCPs. In the event of a future pandemic, it would be essential to promptly revise the guidelines or guidance related to corpse management considering the gradually accumulated evidence and the comprehensive needs of stakeholders.

REFERENCES


33 Tuckett AG. Part II. rigour in qualitative research: complexities and solutions. Nurs Practice 2019:15:32–42.


### Appendix 1. The trustworthiness of Qualitative Research and strategies applied in our study

<table>
<thead>
<tr>
<th>Rigour Criteria</th>
<th>Strategies applied in our study to achieve rigor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credibility</strong></td>
<td>To establish a better rapport from the beginning, potential participants were approached through referrals. At both the start and conclusion of the interview, we expressed our appreciation for their dedicated medical care during the COVID-19 pandemic and their participation in our study.</td>
</tr>
<tr>
<td></td>
<td>An interview protocol was tested at meetings with the research team and using 3 pilot interviews.</td>
</tr>
<tr>
<td></td>
<td>Three researchers (MT, female, an MD, PhD; MN, female, an occupational therapist, MPH; and MS, female, a nurse, MHS) conducted personal, closed, semistructured interviews in Japanese using a videoconferencing system. Before starting the interviews, these interviewers were checked for the knowledge and skills for the survey and received guidance from an experienced researcher. The researcher ensured that the interviewers had the skills to conduct interviews in this research.</td>
</tr>
<tr>
<td></td>
<td>Two independent researchers (MT and HM) created a codebook independently and reached a consensus through discussion (referential adequacy). Next, an independent researcher, MN reviewed the transcripts to ensure that no new codes could be identified. We had regular debriefing sessions with our research members (peer debriefing).</td>
</tr>
<tr>
<td><strong>Transferability</strong></td>
<td>We approached potential participants during the research process to ensure diversity in age, gender, region, and hospital size by purposive sampling strategies (maximum variation sampling).</td>
</tr>
<tr>
<td></td>
<td>The analysis was conducted while conducting the interviews. After no new codes were generated, three more interviews were conducted to confirm that no new codes emerged, thus confirming data saturation.</td>
</tr>
<tr>
<td></td>
<td>We had a contentious review of relevant literature.</td>
</tr>
<tr>
<td></td>
<td>This study was reported by the Consolidated criteria for reporting qualitative research reporting guidelines for thick description.</td>
</tr>
<tr>
<td><strong>Dependability</strong></td>
<td>Interviews were conducted using a videoconferencing system and were all recorded</td>
</tr>
<tr>
<td></td>
<td>Field notes were recorded during and after the interviews.</td>
</tr>
<tr>
<td></td>
<td>We conducted the audit in data analysis.</td>
</tr>
<tr>
<td><strong>Confirmability</strong></td>
<td>To triangulate the results, the validity of data interpretation, categorization, and labeling was discussed with the PRECA-C team, including two clinicians who treated COVID-19 patients.</td>
</tr>
</tbody>
</table>
### Appendix 2. Interview Guide

<table>
<thead>
<tr>
<th>Interview flow</th>
<th>Questions</th>
</tr>
</thead>
</table>
| **Ice-breaking** | Introducing, telling schedule, interview objectives, and making sure agreement to this study.  
We would like to ask you what kind of end-of-life care you provide to COVID-19 patients and their families. |
| **Introduction 1 [Hospital's medical system]** | First, at your hospital, what stage of illness, from mild to severe, do you accept patients in the community?  
Is the ward where you are working for patients with severe diseases? |
| **Introduction 2 [Hospital's end-of-life care system]** | How does the hospital respond to patients and their families when it is determined that further treatment is ineffective anymore? |
| **Subject 1 [Experience of end-of-life, end-of-life care, and sending off]** | Would you please tell us about a case that strongly impressed you in your experience of end-of-life care for COVID-19 patients and their families?  
Please tell us what you felt you could have done or wished you could have done for the patient or family as a medical professional. (Ask what you did or did not do) |
| **Subject 2 [Experience, burnout, the meaning of continuing to work, etc., about the medical staff themselves]** | How did you feel as a medical professional after experiencing the end-of-life care of a corona patient?  
Did you ever feel like quitting or want to be reassigned?  
Why did you decide to stay?  
What do you think about body bag use? |
| **Conclusion [Thoughts on society]** | Is there anything you would like to tell the general public or people who are currently healthy through your experience of end-of-life care for COVID-19 patients?  
Would you please tell us what is important and what you really want to talk about in this experience? |

This study is conducted as the main study of PRECA-C project. Subject 2 in this table is a question, “What do you think about body bag use?”, that was added after the start of the main study to about issues related to the body bag use.