How Should Rehabilitative Departments of Hospitals Prepare for Coronavirus Disease 2019?

To the Editor:

On March 11, 2020, the World Health Organization declared the coronavirus disease (COVID-19) a pandemic as it had spread to more than 100 countries worldwide. As can be observed in China and South Korea, COVID-19 caused by the novel coronavirus (2019-nCoV) will challenge the bed capacity, equipment, and healthcare staff of the rehabilitation department, as in other departments, like never before. According to previous reports, COVID-19 seems highly contagious, as seen in the case of infection in a church group and a call center in South Korea. Considering that 2019-nCoV is easily spread in a limited space, it can also be highly contagious during rehabilitation treatments because of the need for physical contacts and communications between the therapist and the patient. Against the massive influx of patients with COVID-19, how can we prepare to care for patients in need of rehabilitation treatments?

FREQUENT CHECKS FOR SYMPTOMS SUCH AS FEVER, COUGH, DYSPNEA, OR RHINORRHEA IN PATIENTS OR STAFF

The coronavirus disease is believed to be highly contagious and symptomatic, although silent transmission of asymptomatic cases has also been reported. Frequent symptom check in patients or medical staff before rehabilitation can minimize the spread of the virus in confined spaces such as physical therapy rooms.

MASK WEARING DURING TREATMENT

The novel coronavirus has been reported to spread through droplets and airborne transmission. These two main routes of 2019-nCoV infections are categorized by particle size. Droplet infection is defined when large droplets that carry the infectious agent (>5 μm in diameter) become an infection source. By contrast, airborne infection is defined when the infection usually occurs via the respiratory route, with the agent present in aerosols (infectious particles of <5 μm in diameter). The droplets tend to be heavy and thus do not go far and stay around the patient (within 2 m of indoor air), mainly causing close-contact transmission. On the other hand, aerosols float through the air and can cause both long-distance contactless infections and close-contact transmission. Preliminary studies have shown that the main transmission route of 2019-nCoV is through respiratory droplets, although airborne transmission cannot be completely excluded. The size of coronavirus is approximately 0.12–0.15 μm; thus, the 2019-nCoV is not easy to directly filter except with a mask such as N95, which has filtration efficiencies for most penetrating particles sized 0.1–0.3 μm. However, wearing a mask such as a surgical or dental mask, as well as the N95 mask, has been reported to have an effect of blocking viral transmissions because the mask filters droplets or aerosols containing virus particles rather than the virus itself. The surgical mask is also designed to filter 99.9% of aerosols of 3 μm in size that contain bacteria or viruses. Considering this, not only N95 masks but also surgical masks can also filter out all droplets that contain large amounts of viruses entering or leaving the respiratory tract and a significant amount of aerosols. Considering that a significant amount of viral penetration is required for virus infection, mask wearing for both the therapist and the patient during rehabilitation treatment is believed to show a reduction effect on the transmission of 2019-nCoV.

AVOIDING FACE-TO-FACE CONVERSATIONS BETWEEN MEDICAL STAFF AND PATIENTS

As seen in the 2019-nCoV infection cases in South Korea, droplets and aerosols, which are produced during conversations, prayers, and singing among people who sit densely in a limited space such as religious facilities like churches, seem to be the main cause of COVID-19 propagation. In addition, COVID-19 can also spread through having a meal and conversation together, as can be observed in many countries. Therefore, avoiding talking and having a meal together while facing each other not only between patients and medical staff but also among medical staff may help prevent the spread of COVID-19.

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