

My Grandparents' Battle Against COVID-19

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"This Chinese broccoli is so expensive," my grandmother complained, snaking through aisles of fruits and vegetables amid hordes. On March 19, 2020, my grandparents scavenged multiple Chinese supermarkets to stock up on groceries, preparing for a deadly scourge befalling the city. My grandfather inspected various fish nestled in open beds of shaved ice. Their cart was laden with many ingredients planned for culinary delights: garlicky shrimp in soy sauce; crispy, fried whiting; and sauteed snap peas with tender slivers of pork or chicken.

At home, they cooked dinner to the noise of the Chinese television. My grandmother's serene but concentrated face focused on washing and chopping meat and vegetables, while my grandfather's hands maneuvered the fiery, cast iron wok. Because their senior center would close soon due to a mysterious virus, they pondered their uncertain future of self-imposed home isolation and frequent cooking.

Two days later, my grandfather developed a dry cough and a low-grade fever. When he told my grandmother, her eyes widened with the realization that they had neglected to wear masks at the supermarkets. Worried that my grandfather contracted COVID-19, my mother, a general internist, advised him to take hydroxychloroquine and azithromycin--unapproved treatments at the time. Upon hearing of my grandfather's symptoms, I was terrified, but my mother comforted me, advising that the medications could help. My grandfather started these medicines reluctantly but still felt ill.

To my family's dismay, my grandfather continued to cough and feel weak. At the local urgent care center, the doctor wielded long, thin probes to sample mucus inside my grandfather and grandmother's noses. This COVID-19 polymerase chain reaction (PCR) test detects the ribonucleic acid (RNA) of the SARS-CoV-2 virus. My grandmother's test took four days to return negative, while my grandfather's test took seven days to return positive.

Using a pulse oximeter device that my mother foraged after phoning eight pharmacies, my grandmother and grandfather's oxygen saturations were initially 94% and 97%, respectively. The next day, 92% and 97%. On Saturday, Grandpa's X-ray of his lungs had white patches, revealing pneumonia. COVID-19-induced pneumonia has a tendency to affect both lungs. They become filled with fluid and inflamed, limiting one's ability to take in oxygen and causing shortness of breath, cough, and other symptoms. Pneumonia associated with COVID-19 can be especially severe and result in breathing difficulties that take months to improve. Moreover, my grandfather's oxygen saturation fell dangerously low to 91% that day, so his doctor referred my grandfather to the hospital for further evaluation--two weeks after their shopping trip. My grandparents had always seemed invincible. They grew up in the rugged farmlands of rural China and met while working long hours at a food market in Venezuela. Because of their limited English proficiency, my grandmother sewed clothes in the sweatshops of Chinatown, and my grandfather picked up passengers in his yellow

cab late at night into the morning. Awed by their courage and countless sacrifices, I never imagined that they could face near death due to an invisible pathogen.

My grandmother helped my grandfather pack his toiletries for his trip to the hospital. His medicines, his shoes, and his slippers fit neatly into his bags. At the front of the emergency room doors, my grandmother was stopped by hospital staff wearing surgical masks, isolation gowns, gloves, and face shields. They asked who the patient was, and upon hearing her answer; they sent my grandmother away. Because it was too dangerous for her to enter the emergency room, she waved farewell with downcast eyes, unsure if she would ever see him alive again.

Soon after my grandfather was admitted to the hospital, my grandmother fell ill. She developed diarrhea and took medicine for it. She lost her taste of food, so she no longer enjoyed her favorite dishes. Like my grandfather, she developed a low-grade fever. Despite taking Tylenol, she still felt lethargic and dizzy, so she laid all day in bed.

One day, she suddenly lost track of her slipper. Its disappearance puzzled her. Alone in her house, she left her bed and walked to the kitchen, and her eyes widened. All of the empty takeout boxes that had piled up on the table had fallen to the ground, and under the wreckage was her lost slipper. When did all of these boxes fall? she wondered, for surely, she would have remembered hearing the crash of the plastic containers. She then realized that she was unable to remember yesterday's events. She frantically called her eldest daughter, distraught that she had lost her memory.

My aunt insisted that my grandmother go to the hospital and arranged for my mother to take her there later that night. In the emergency room, Grandma noticed that there were very few people there, and there were many empty beds. The onslaught of the pandemic was only starting for the unsuspecting hospital staff. Upon occupying a bed, Grandma was questioned about Grandpa, who was staying at the same hospital.

Unbeknownst to our family, Grandma had developed life-threatening, severe hyponatremia due to diarrhea, poor oral intake, and her blood pressure medication, so they started giving her intravenous saline through an IV catheter. Her doctors wanted to admit her to the medical intensive care unit for closer monitoring as they corrected her hyponatremia, but the unit was full. When inpatient treatment corrects sodium levels too quickly, a patient can develop osmotic demyelination syndrome, a form of brain damage. Symptoms may manifest for several days after a sodium overcorrection, and can include impaired speech or swallowing, limb weakness, seizures, confusion or depressed consciousness. In the most severe cases of pontine myolysis, one can develop locked-in syndrome. The damage and dysfunction can be permanent.

Upon hearing the mention of the IV catheter, I recalled the dreaded shots I received annually. The singular moment that the needle pierced my arm was painful, and having an IV catheter in my hand for hours was inconceivable. However, I relaxed when I learned that it was a plastic tube that my grandmother could barely feel. Three to four hours passed before the nurse returned, saying that the bag of intravenous saline fluid was finished. Grandma felt relieved, until the nurse said, "Now we need to give you another bag of water." Grandma asked, "Of what?" and the nurse replied, "Of sugar."

Hours later, Grandma was brought into a very small room without a bathroom. Morning approached, and Grandma's bed was brought to sit up so that she could eat the breakfast perched on her lap. She became thirsty and called someone in her room for water. Later, she rang the bell again, and upon arriving, her nurse told Grandma that everytime the nurse entered the room posed a great risk for the nurse. The nurse asked Grandma to request everything at one time. Grandma was surprised, but she recalled that the nurse wore two pairs of gloves, a plastic isolation gown, three masks--an N95 respirator and two surgical masks, and gloves and that her nurse needed to change her personal protective

equipment after each visit to her room. My grandmother apologized and began to call her nurse much less frequently.

A room became available later in the day, and my grandmother exited her small cubicle and moved into a large room on the eighth floor. My grandfather had been living on the sixth floor. Armed with this knowledge, my grandmother ventured out into the hallway in search of an elevator that would take her to her husband. She looked around curiously in the hallway, eyes scanning for the familiar number of my grandfather's room, when a staff member stopped her. "What are you doing?" they questioned. She told them she was looking for her husband. "You can't leave your room. It's dangerous," they reprimanded, sending her back to the eighth floor, dejected. My mother suggested that my grandmother ask to be in the same room as my grandfather, but my grandfather informed her that his room was already fully occupied with other patients. The doctors allowed my grandfather to see my grandmother, but my grandfather lacked the energy and strength at the time, for the coronavirus had robbed him of his usual vigor and enthusiasm.

However, one day, at 3 o'clock in the morning, my grandmother heard people bringing someone to her room. Why does that look like my husband? she wondered. It was Grandpa! Three people had helped him pack up everything in record time and moved him into her room. My mother informed me that many people were dying in the hospital of COVID-19. "I am glad that you are here," she said, and he returned her sentiment. They ate and conversed as if they were at their own dining table at home until they finally fell asleep.

Due to hospital visitor restrictions, I could only FaceTime them at the same time. I listened to their comments about their living conditions. "The food at the hospital is very good," my grandfather stated joyfully. I thought of his particular gastronomical tastes and wondered how the hospital meals compared to the five-star family recipes that my grandmother and he taught my

mother and me. My cousins and I conversed about their news and our worries. At night, when our grandparents fell asleep in their hospital beds, we would lie awake, making promises to the stars and pleading for our grandparents' safety.

My grandmother longed to wash her hair, but she was apprehensive about falling because of her dizziness. "I'll be right outside of the curtain," my grandfather assured her. "If you fall, I'll be here to rescue you."

When it became clear that my grandfather was developing respiratory failure, the doctor prescribed high doses of dexamethasone medication to reduce inflammation and Anakinra, an interleukin-1 receptor antagonist and an experimental treatment for COVID-19. My grandmother's health was improving, but Grandpa remained very ill. His oxygen saturation was measured to be 92%, so he received supplemental oxygen by nasal cannula continuously and slept in the prone position for better oxygenation. His doctor instructed my grandfather to walk from his bed to the window and back for exercise. His oxygen saturation was measured after his exercise to be 92%, and my grandma's oxygen saturation was 97%. Over time, my grandfather's oxygen requirements gradually increased, and my mother informed me that he would need to be placed on a ventilator soon. His breathing had become so labored that his loud voice was reduced to a whisper metered by his respirations.

They fell into a routine quickly. Each day, a phlebotomist would visit their room and take their blood four or five times, maybe even more. The skillful workers would draw it more easily, but clumsier ones would miss the vein completely, so needle holes dotted my grandparents' hands. As my grandmother told me about this procedure, I winced, scolding my mind for conjuring up gruesome mental images. I found a yearly blood draw detestable already, and I was unable to imagine experiencing it multiple times per day. Furthermore, two bags of saline solution and one bag of sugar solution would flow into my

grandmother's veins frequently, and my grandmother took three or four sodium pills a day. On the fifth day, my grandmother agreed to be discharged, for that day, she felt that her dizziness had subsided. They stated that she could return home tonight, so she packed up her belongings and removed the IV catheter from her hand. Then, they drew her blood. Her doctors noticed that her sodium levels were dropping again, and they delayed her discharge. "We will need to give you another bag of saline solution." My grandmother casually said that she removed her IV catheter by herself. "What?" they exclaimed, shocked. "How could you do that by yourself?" She was surprised at their sternness. They inserted another IV catheter, and after three hours, the bag of saline solution was empty. Her doctors provided her with a prescription, and a wheelchair whisked my grandmother to the lobby. A woman assisted my grandmother in bringing down the belongings to my mother, who left my grandfather a bag of oranges and plums before driving my grandmother home.

The daily blood tests showed that the levels of his inflammatory markers were decreasing, and his oxygenation was improving. His oxygen requirements decreased, which signified that his lungs were healing and that his immune system was adequately controlling the virus. However, he lost 15 pounds in 15 days in the hospital. Weight loss occurs because the body must expend tremendous energy to upregulate important functions, such as increased cardiac activity, oxygenation of damaged lungs, and increased immunologic activities.

Although my grandparents are very old, I almost lost both of them within a short time frame of two weeks during a pandemic. I learned that we are never prepared to lose our loved ones, and that miracles can happen. After many months, my grandmother's sense of taste was restored, so she could enjoy her culinary dishes again. However, long after my grandparents' recovery, they still suffer some long-lasting effects of the coronavirus: Their speech has become less energetic and less smooth. They possess only half

of their usual energy, and their breaths are short and shallow--symptoms of a phenomenon termed long COVID. Long COVID has many other names: long-haul COVID, post-acute COVID-19, long-term effects of COVID, or chronic COVID.

Moreover, their memory has deteriorated. My grandmother, who once joked about losing her memory and mistaking me for my cousin, forgets pieces of information more easily. Her sharp mind, which was once able to compute long multiplication in seconds or critically eye a piece of cloth that she fed her sewing machine, has also worsened, and she finds it more difficult to focus. Nevertheless, despite their side-effects, I feel inspired by their amazing survival.

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