Hurricanes Disrupt At-home Obstructive Sleep Apnea Treatment

For patients who have obstructive sleep apnea (OAS), hurricanes can be especially disruptive. According to a study that surveyed OAS patients' experiences with Hurricane Irma, many reported that they were unable to use positive airway pressure (PAP) therapy before, during, and after the storm. The Journal of Clinical Sleep Medicine recently published the results of the survey conducted by University of Miami Miller School of Medicine researchers.

They found that after Hurricane Irma, nearly 80% of patients could not use their PAP machines for an average of 4.3 days. As a result of the treatment lag, 64% of those patients experienced snoring, 19% choking, and 42% sleepiness.

The participants also communicated that there was a lack of information to help them continue their treatment despite the loss of electricity, need to relocate, and other life-altering situations that may occur.

"As physicians who commonly treat patients with obstructive sleep apnea, we need to expect a transient loss of treatment and have ready resources for our patients," says study author Alejandro D. Chediak, M.D., associate chief of clinical affairs in the Division of Pulmonary, Critical Care, and Sleep Medicine at the Miller School of Medicine.

Do you use a PAP device for OSA?

Here's how to prepare for a hurricane.
Plan early, have your PAP and accessories handy and have your carrying case nearby.

- If distilled water is not available for your humidifier, it is acceptable to use bottled water or potable tap water.
- Avoid consuming excess alcohol (e.g., at "hurricane parties") as this can worsen sleep apnea and the quality of your sleep.
- Maintain a copy of your PAP prescription in case of loss or damage.
- If unable to use your PAP for some time, try to sleep on your side, stomach, or semi-erect.
- If planning to evacuate, familiarize yourself with the availability of electricity.
- Know how your sleep apnea affects your well-being and plan accordingly. Consider investing in a battery pack.
- Extend battery life by disabling the humidifier of your PAP device.

Dr. Chediak said Hurricane Katrina, which made landfall in Southeast Louisiana in 2005, prompted him to ask how patients who rely on at-home equipment could continue treatment through a natural disaster.

"I learned back then that the infrastructure was a problem," he says. "If you are trying to import sleep apnea machines, more masks, more equipment, how do you move it into the area and identify the people that need it?"

The good news? Much has changed in sleep medicine since Hurricane Katrina.

For example, today's machines can be managed and tracked through an internet portal, which allows insight into the need for assistance, he says.
Also, there is greater access to different power sources, from special batteries to generators, to keep equipment running.

Dr. Chediak and colleagues studied patients who, in normal circumstances, were known to use PAP therapy regularly. They analyzed cloud-based monitoring data on patients' use of PAP machines before, during, and after Hurricane Irma, which made landfall September 9, 2017, on mainland Florida as a Category 3 storm. More than one million people lost power, and many had to live temporarily in shelters or lost their homes because of the storm.

Researchers surveyed 117 patients about how the hurricane-impacted their therapy.

Seventy-one of the 117 patients said they missed PAP therapy treatments because they lost electricity. But that was not the only reason for the disruptions. Misplaced equipment during evacuations and a lack of power outlets at shelters were among the challenges.

Cloud monitoring revealed that people who lost electricity experienced an average decline of 33 minutes in PAP use for the first seven days post-hurricane.

Notably, there was increased use post-hurricane among some of those who did not lose electricity, a finding that might reflect how extreme weather events impact people's lives. It could be that people sacrifice on sleep and rest before the storm and are sleep deprived after, says Dr. Chediak.

Finally, the study confirmed that information that addresses obstructive sleep apnea patients' special needs to be more readily available.

"This could apply to any natural disasters, from hurricanes and floods to earthquakes and fires," he says. "We need centralized information that patients can
use to prepare themselves for potential displacement or extreme weather. Ideally, that could be provided by our national societies or hospitals. At the University of Miami Miller School of Medicine, we are developing a portion of our website devoted to what do our patients need to do when an extreme weather event threatens."

Patients need to know, for example, that newer PAP devices can be run on special batteries or generators. The authors listed different options for battery devices for PAP equipment in the paper.

Maintaining PAP therapy is important for people with chronic OSA. Without therapy, symptoms, such as poor sleep, lethargy, and snoring, often recur in the short term. Long-term treatment lapses could lead to increased risks of hypertension, cardiac arrhythmias, strokes, and more.

Coauthors of the study: Aleksandra M. Kwasnik, M.D., Mayo Clinic's Billings Clinic in Mont.; Pamela Barletta, M.D., medical clinical research coordinator at the Miller School; Alexandre R. Abreu, M.D., UHealth Sleep Medicine; Catalina Castillo, M.S., and Yoel Brito, M.D.

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What else can I do to fight Obstructive Sleep Apnea?

Oral appliances are worn in the mouth during sleep, just like a sports mouthguard or an orthodontic appliance. Read more.