Prescription for children in pain from pandemic: read them a story

Amina Khan
Los Angeles Times

If you know or have kids who've been suffering from the disruption of the pandemic, there may be a pharmaceutical-free way to alleviate their pain and stress: Read them a story.

Scientists in Brazil who studied the effect of storytelling and riddle-based games on children hospitalized in an intensive care unit found that stories lowered the young patients' stress hormone levels, reduced their self-reported pain scores and resulted in them speaking more positively about hospitals, doctors and nurses.

"Our findings provide a psychophysiological basis for the short-term benefits of storytelling," the study authors wrote in the Proceedings of the National Academy of Sciences.

The results offer a simple and inexpensive intervention that could ease the physical and psychological pain of hospitalized children, the authors said. And they hint that storytelling could have a powerful effect on children's well-being beyond the hospital setting — including for those whose home and school lives have been left in disarray by the coronavirus.

The pandemic has "some kind of similarity to the ICU context, in the sense that we are locked in, we are extremely anxious, afraid of being sick, and you don't know when [things] are going to get better," said lead author Guilherme Brockington, a physicist at the Federal University of ABC in São Paolo, Brazil.

Humans love stories, whether it's telling them or hearing them. This is true from childhood to old age, and across language and culture. Studies suggest that love of the narrative may have played a critical adaptive role in human society and allowed us to influence our emotions and forge connections with one another. Psychologically, stories allow us to pull meaning out of a sometimes chaotic world and to learn the intricacies and pitfalls of social interactions through the safety of vicarious experience.

Mentally stimulating activities from childhood through old age seem to provide a "cognitive reserve," scientists say.

Researchers have a hypothesis for why stories have such an effect, an idea called "narrative transportation." By weaving a tapestry of language, text and imagination, stories immerse heart and mind. And as the story world becomes more immediate, more "real," the actual world becomes slightly more remote, or harder to access — at least for a little while.

"If you're listening to a story, your mind is transported to another place, away from the hospital and into this sort of imaginary realm," said Raymond Mar, a psychologist at York University in Toronto who was not involved in the study.

Georges Gobet/AFP-Getty Images/TNS

A child looks at books in a library in a street of the Bel Air district in the city of Rennes, France. A study in Brazil found that stories lowered children's stress hormone levels and reduced their self-reported pain scores.

"These narrative transportations and mental simulations can help reframe personal experiences, broaden perspectives, deepen emotional processing abilities, increase empathy and regulate self-models and emotional experiences," the study authors wrote.

Storytelling, in other words, seems like a powerful tool that can be harnessed for good. That's why it's common for hospitals around the world to have storytelling programs for young patients.

Still, their benefits have remained largely anecdotal. For this study, Brockington and his colleagues wanted to build a case based on scientific evidence.

To do so, the researchers focused their efforts on children in intensive care, who are already dealing with the hardship and pain associated with their illnesses. On top of that, being removed from home and school deprives them of routines that bring comfort and security, can interrupt their development and can affect them in other ways long after they've left the hospital.

The scientists recruited 81 children who had been admitted to the ICU at Rede D'Or São Luiz Jabaquara Hospital in São Paulo. They ranged in age from 2 to 7 and suffered from similar conditions, such as respiratory problems brought on by asthma, bronchitis or pneumonia.

The children were randomly split into two groups. In the experimental group, 41 participated in a program in which a trained volunteer read a children's tale for 25 to 30 minutes. The patients were able to choose from one of eight stories typically found in Brazilian children's literature. (They could ask at any time to change stories or have one reread.)

In the control group, the volunteer took on a different role, spending the same amount of time asking the remaining 40 children to solve amusing riddles. The idea was to control the amount of time, attention and social interaction each child would receive, regardless of whether they were getting riddles or stories.

The study team examined the children's responses on multiple levels. The researchers collected saliva samples from each participant before and after sessions to track changes in levels of cortisol (a hormone associated with stress) and oxytocin (a hormone linked to empathy and emotional processing).

The children also took a subjective test to report the level of pain they were feeling on a scale of 1 to 6, before and after each activity. Finally, they participated in a verbal free-association task by describing their impressions of seven cards depicting relevant subjects: nurse, doctor, hospital, medicine, patient, pain and book.

Across the board, the riddles and the stories had a positive impact. Cortisol levels dropped, oxytocin levels rose, and subjective pain reports eased.

There was one key difference: The stories appeared to be roughly twice as effective as the riddles. Oxytocin levels rose ninefold after the storytelling intervention, versus a fivefold increase after the riddles. Cortisol levels dropped by about 60% for the children who heard stories, compared with a drop of 35% for those who worked on riddles.

As for pain, children who heard stories saw their average scores fall from 3.85 to 1.15 (a drop of 2.7 points), while the average pain scores for those with riddles fell from 3.72 to 2.18 (1.54 points).

Safe sleep for babies

Nicole Villalpando
Austin American-Statesman

In the 1990s, the National Institute of Child Health and Human Development's safe sleeping campaign reminded us all "back to sleep," as in put your baby on her back when you put her to bed.

It worked. More parents put their babies on their backs and the rates of sudden infant death syndrome went down from 130.27 per 100,000 live births in 1990 to 33.3 per 100,000 live births in 2019, according to the Centers for Disease Control and Prevention.

Rates of accidental suffocation and strangulation in bed for infants have increased in the same time period. Those rates went from 3.44 per 100,000 live births in 1990 to 25.5 per 100,000 per live births in 2019.

Unexplained causes of death in bed also have increased slightly from 20.87 per 100,000 live births to 31.3 per 100,000 live births. The three — SIDS, unexplained deaths, and suffocation and strangulation — are considered sudden unexpected infant deaths.

There are some factors that increase a baby's risk factor for SUID, including being born prematurely or at a low birthweight or having a mother who smoked.

Another big risk factor is where the baby is put to bed.

A new report from the American Academy of Pediatrics found of the incidents that were entered into the CDC's Sudden Unexpected Infant Death Case Registry from 2011 to 2017, 72 percent happened in an unsafe sleeping environment, and 75 percent of those that were caused by suffocation happened when the baby's airway was blocked by soft bedding.

Dr. Shyam Sivasankar, a pediatric emergency medicine physician at St. David's Children's Hospital, says when babies come into his emergency room not breathing, or after having had a near fatal suffocation event, the first thing he says is "tell me where they are sleeping."

Often the baby is co-sleeping with an adult, he says, and the baby gets caught in adult blankets or pillows.

That's when he'll reiterate how important it is to put baby to sleep in a crib with nothing in it.

Sivasankar recommends that exhausted parents who are getting up with babies in the middle of the night for feedings should set an alarm on their phones as a reminder to put baby back into the crib and not fall asleep with them in bed, on the sofa, in a chair or wherever they are feeding them.

Sometimes the suffocation or strangulation happens to a baby who is in a crib with a blanket or something else soft like a stuffed animal. Sivasankar often hears that parents think their baby is cold and so they give them a blanket. He recommends using warmer clothing or a wearable blanket or sleep sack to keep them warm instead of something that is separate and loosely floating around the crib.

Having babies sleep in an empty crib with just a fitted sheet needs to be followed for the first year of life, Sivasankar says. Even tools like wedges, which are used for babies with reflux, shouldn't be used unless doctor recommended.

Babies who fall asleep in car seats, swings, strollers or on a parent, should be moved as soon as possible to their crib rather than allowing them to nap or sleep in one of those places, which are not a recommended safe sleeping environment.

Car seats, strollers and swings also should be free of toys and blankets or other suffocation hazards in case a child falls asleep in one of those devices.

These deaths are "an unfortunate situation," because they are preventable.

"The parents who experience this, they go on to educate and promote these safe sleep practices," Sivansankar says.

Biscupid aortic valve: how much should I worry?

Mayo Clinic News Network

DEAR MAYO CLINIC: I consider myself to be in good health. I work out several times a week, but recently I began experiencing episodes of shortness of breath after going up and down the stairs in my home. After running on the treadmill a few weeks ago, I got dizzy and fainted. I went to my doctor who told me that I have a bicuspid aortic valve. Can you share more about what this is and if it can be fixed? Also, I have children. Are they at risk for this condition?

ANSWER: It can be a shock to receive a diagnosis that you have a heart condition. The good news is that you should be able to live a healthy and active lifestyle with the right care.

As a reminder, the heart has four major valves. The two valves on the left side of the heart are the aortic valve and the mitral valve, and the two valves on the right side are the pulmonary valve and the tricuspid valve. The aortic valve is the main "door" out of the heart. Blood flows through the aortic valve to exit the heart, and supplies oxygen and nutrients to the rest of the body.

The normal aortic valve has three leaflets, also known as cusps. Some people can be born with one, two or even four cusps of their aortic valve. The most common of these abnormalities is an aortic valve with two cusps — thus, a bicuspid aortic valve.

A bicuspid aortic valve is a common cardiovascular condition, affecting about 1% of the general population. Bicuspid aortic valves are more common in men, but also affect women. A bicuspid aortic valve is a congenital condition, meaning that people are born with two rather than the normal three cusps on their aortic valve. Although bicuspid aortic valves can occur sporadically without any inheritance pattern, the condition also can run in families. Many people can live with a bicuspid aortic valve for their entire life, but there are those who may need to have their valve surgically replaced or repaired.

When people are born with a bicuspid aortic valve, the bicuspid valve typically functions well throughout childhood and early adulthood. When people reach middle age, bicuspid aortic valves can begin to degenerate. Degeneration is normal for aortic valves as people age, but occurs at a younger age in bicuspid aortic valves compared to normal aortic valves.

Degeneration occurs in two forms: narrowing, also known as stenosis; or leaking, also known as regurgitation. People do not feel any symptoms of bicuspid aortic valves until the narrowing or leaking becomes severe enough to affect heart function. At that point, people with bicuspid aortic valves may notice shortness of breath, difficulty exercising, lightheadedness or chest pain. This sounds like what happened in your situation.

If heart function becomes significantly impaired, people can develop heart failure — the symptoms of which include fluid retention, weight gain, swelling in the legs, substantial breathing difficulty and, potentially, even syncope, which means passing out.

Health care providers usually diagnose bicuspid aortic valves with an ultrasound of the heart called an echocardiogram. CT scan and MRI also can detect bicuspid aortic valves. Bicuspid aortic valves often make characteristic sounds when health care providers listen to hearts.

In addition to early valve degeneration, people with bicuspid aortic valves carry a risk for enlargement, or aneurysm development, of the ascending aorta, which is the main blood vessel that carries blood out of the heart. People with bicuspid aortic valves rarely can have narrowing, or coarctation, of the aorta. Echocardiogram, CT scan and MRI can detect aneurysms and coarctations of the aorta. Your health care provider may want to monitor you with scans at different intervals.

Bicuspid aortic valves are more prone to infection than normal aortic valves. Infection of a heart valve is called infective endocarditis. It can have devastating consequences. Infective endocarditis can occur from bacteria that are a normal part of the human mouth. People with bicuspid aortic valves in addition to dental abscesses or other mouth infections carry a higher risk of infective endocarditis. It is critically important that people with bicuspid aortic valves undergo regular dental cleanings and maintain excellent oral hygiene.

People with bicuspid aortic valves need to have examinations from their health care provider and tests to monitor the valve and aorta on a regular basis. Echocardiograms are the most common tests to monitor people with bicuspid aortic valves, but CT scans and MRIs also can serve that purpose. The frequency of monitoring depends on the degree of valve stenosis or regurgitation, ascending aorta enlargement, and a person's family history. Tests may be necessary as frequently as every six months to as rarely as every five years. Because bicuspid aortic valves can run in families, all first-degree relatives (i.e. children, siblings and parents) of people with bicuspid aortic valves should have an echocardiogram to check for a bicuspid aortic valve and an ascending aortic aneurysm.

There are no medications to treat a bicuspid aortic valve. The only treatment is surgery to repair or replace the aortic valve if the stenosis or regurgitation becomes bad enough, or if the ascending aorta becomes too large.

Not all patients with bicuspid aortic valves will need heart surgery. Studies suggest that up to 75% of people with bicuspid aortic valves will require intervention at some point in their lives. If people with bicuspid aortic valves have regular monitoring and prompt treatment, their lifespans are similar to the general population.

People diagnosed with a bicuspid aortic valve should understand that they will require regular monitoring and may eventually require valve replacement or repair. They should otherwise live an active, healthy and normal lifestyle.

— Dr. Michael Cullen, Cardiovascular Medicine, Mayo Clinic, Rochester, Minnesota