

REDUCING HOSPITALIZATION- RELATED STRESS:

Improving Patient Satisfaction and Outcomes

Amy Mora, MBA, MHA, RHEd

Claire Thevenot, MBA, BSN, RN, OCN, CPXP

Background

Hospitalization is commonly described as a stressful life event. Hospitals are the first to recognize that stress influences the patient experience, but struggle with meaningful approaches to lessen the impact. Part of this stems from the fact that stress can be difficult to analyze, as it is a broad and complex construct. Although individuals perceive and respond to stress differently, a hospital stay exposes patients to multiple known stressors simultaneously; the cumulative impact can be overwhelming for anyone. The experience brings us face-to-face with our own mortality, creating anxiety over our bodies and their integrity. We experience not only physical discomfort, but the emotional pain of disconnection from home, relationships, and daily routines. Surrendering control and trusting strangers to care for us can be one of the most difficult things we ever have to do.¹

Even before admission, we feel the stress of a hospitalization. The American Psychological Association's 2014 report, *Stress in America™: Paying with Our Health*, identifies health concerns as one of the most common stressors reported by Americans.² In the APA's 2018 report, *Stress in America™: Uncertainty About Healthcare in America*, current health status of an individual showed an association with his or her stress levels. People with chronic health conditions reported a significantly higher average stress level than those without chronic conditions,³ suggesting that the sickest patients in hospitals are the most stressed.

When individuals perceive their life circumstances as highly stressful or threatening, they tend to negatively assess their own coping abilities. Perceived stress is thus recognized as a significant predictor for low satisfaction; not only in the case of stressful events, but in an individual's evaluation of life in general.⁴

Since 2006, the Centers for Medicare and Medicaid have linked hospitals' pay to performance in patient satisfaction measures through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.⁵ Fortunately, the identified domains of patient satisfaction provide a practical framework to guide hospitals in their efforts to improve the patient experience. Much of the work that hospitals do to increase patient satisfaction helps to mitigate some of

the major causes of stress reported by patients. Still, it is important for hospitals to recognize stress as a distinct issue which can negatively influence patient outcomes and satisfaction.

The Stress Response and Its Impact on Hospitalized Patients

The body reacts to acute stress with the "fight or flight" response. First described by Dr. Walter B. Cannon at Harvard Medical School in the 1920's, fight or flight consists of nervous and endocrine system changes that provide the body with a burst of energy to respond to a perceived threat.⁶ Prolonged or chronic activation of the stress response causes significant wear and tear on the body, which can include impaired immune function, elevated blood pressure, and higher risks of obesity and mental illness.⁷

Studies based on patients' self-reports of stress have associated high hospitalization-related stress with more pain, lower physical status during hospitalization, and less improvement after discharge compared to patients reporting low hospitalization-related stress.⁸

Physiological evidence suggests a relationship between adverse events and stress. Biomarkers of stress (such as measures of cortisol and blood glucose) during hospitalization have been individually associated with:

- The development of cognitive dysfunction;
- Increased risk of cardiovascular events in the year following discharge;
- Development of wound infections after discharge; and
- Greater in-hospital and 1-year mortality in myocardial infarction patients⁹

Readmission trends also point to stress as a culprit. Nearly 20% of Medicare patients discharged from hospitals develop an acute medical problem within the subsequent 30 days that necessitates another hospitalization.¹⁰ These patients are at an increased risk for Post-hospital Syndrome, a myriad of conditions which might derive from the allostatic stress that patients experience in the hospital.¹¹ Sleep deprivation, disruption of normal circadian rhythms, poor nourishment, pain, medications, and deconditioning are recognized stressors that collectively and adversely compromise the patient's ability to recover from the acute illness that led to the initial hospitalization.¹²

The Medical Center at Bowling Green, KY, offers a choice of sleep programs which run nightly on select TV channels in the hospital. Patients can enjoy a darkened TV screen and their choice of ambient noises or soothing music as they relax into sleep for the night. According to Andy Sturm, BSN, RN, CDE, MLDE, patient educator at The Medical Center at Bowling Green, having options to help patients relax, whether during the day before a procedure or at night to promote a good night's sleep, is important to their hospital. She states, *"A family recently shared with us how thankful they were for the relaxation content which aided in their mother's recovery and decreased her anxiety. Getting a good night's sleep is healing to the mind and body. A patient told us 'I have listened to the ocean every night I have been here. Glad that was available'. Another patient said, 'It helped block out noise and I actually slept better than I thought I would.' We were pleased to hear from patients whose expectations were exceeded."*

At The Johns Hopkins Hospital, NICU nurse Kadi Martin, MSEd., RN, BSN, RN, DCS, CIIT, CIMI, is using a variety of relaxation therapies in their Children's Center to support age appropriate trauma-informed care. *"The stress that babies and their*



Relaxation content on the patient TV helps reduce stress and offers a non-pharmacologic option for pain relief.

families experience is traumatic and can be very detrimental to a premature infant. Finding ways to alleviate emotional and physical pain is critical," she says. In addition to other therapies, her care unit provides iPads for parents that play calming music for their baby accompanied by video images to help the parents relax. As part of the hospital's NEST (nurturing environment support team) she says the soothing music helps hospitalized babies lower their heart and breathing rates, thus conserving energy for healing and growth. The gentle music also promotes restful sleep needed for healthy brain development.

Another Kentucky hospital, Baptist Health in Lexington, is also using a TeleHealth Services system where patients can select and play calming, relaxation videos on-demand on their in-room HDTVs. Nature scenery and relaxing music provide patients with an escape from the hospital environment and help to elicit the relaxation response. Integrative C.A.R.E. Services Coordinator, Cathrine Weaver, MSN, HN-BC, RN, says, *"Relaxation videos provide our patients options to address the stress or anxiety they may experience while in the hospital. This capability empowers patients to participate in their own care needs because they, or their family, can access the videos independently."*

Stress, Coping, and the Relaxation Response

Per the theory of stress and coping developed by Lazarus and Folkman, stress is not simply the stimuli or event that triggers the stress response; it is a two-way process in which an individual interacts with his or her environment.¹³ Stress impacts an individual's well-being or ability to function only when individuals perceive the

situation as stressful and their resources are inadequate to deal with the environmental stimuli. Health and well-being are negatively impacted when individuals feel they are inadequately equipped to handle a stressor.¹⁴ The opposite is true for individuals with adequate levels of self-efficacy as they possess both skills and belief in their abilities to handle a stressful situation.¹⁵ Fortunately, an individual's level of self-efficacy can be improved, even

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in the midst of a stressful experience. Patients build self-confidence from positive experiences in dealing with a stressor and become more resourceful in managing their stress.

Dr. Herbert Benson, professor of medicine at Harvard Medical School and director emeritus of the Benson-Henry Institute (BHI) at Massachusetts General Hospital, has committed much of his career studying how the stress response could be countered with focused, intentional calming techniques, eliciting the ‘relaxation response.’¹⁶ A growing body of evidence demonstrates the stress-reducing health benefits of practices such as deep breathing, meditation, visualization, prayer, tai chi and yoga. A groundbreaking 2018 study suggests that the relaxation response is actually powerful enough to alter gene expression. The study indicates that the relaxation response can selectively alter inflammatory processes, immune system function, and imbalance of circadian rhythms linked to oxidative stress, supporting a reduction in blood pressure rate.¹⁷ Changes were noted in the genomic signature of individuals who, after eight weeks of relaxation response intervention, had clinically significant reductions in blood pressure compared to those who did not.¹⁸

Most importantly, patients who experience the relaxation response discover that they have some control over how their body responds to stress, which can raise their levels of self-efficacy and ultimately improve how well they manage stress over time.

What Can Hospitals Do?

To limit stress caused by the environment, hospitals can provide resources to patients and encourage behaviors they already use to manage stress in their daily lives. The foremost activity that Americans report for stress relief is listening to music (reported by 44% of people surveyed), the third (after walking and exercise) is watching TV/movies for 2+ hours per day (reported by 40%).¹⁹ The patient’s in-room television can be leveraged for both.

Many hospitals already recognize their televisions as foundational to the patient experience. As the most watched space in the room, the TV serves as the patient’s main source of entertainment and information

throughout the hospital stay. Patients appreciate the distraction from their current circumstances that TV provides, as it helps them to maintain some of their normal routine and creates a sense of connection to home.

Hospitals can be more intentional in using TV to help patients combat stress by adding special relaxation content. With an interactive video on-demand system, such as TeleHealth Services’ PXi Patient Infotainment platform, patients browse from a library of relaxation videos with accompanying music, select a title which addresses their needs and preferences, and view it when they desire. Most patients who can operate a television can quickly learn how to play a video with little to no guidance and enjoy the content for extended periods of time.

The therapeutic value of relaxation interventions has shown benefits not only for the patient experience, but in specific clinical measures across many different conditions, including cancer, insomnia, childbirth, and chronic pain.²⁰ Relaxation content has also proven especially helpful with improving sleep, largely by masking hospital noise (which persists as the primary hospital complaint).²¹ Likewise, significant improvements have been observed in the use of relaxation content for pain management. In 2018 the Joint Commission introduced the requirement that hospitals offer at least one non-pharmacologic option for pain relief, acknowledging the validity of other forms of pain control.²²

Relaxation Content

Nature Scenery and the Biophilia Hypothesis

Patients may be exposed to unsettling images and sounds while browsing through regular television programming; even daily newscasts can be stress inducing. Many hospitals offer nature-themed relaxation programming as a calming alternative. The biophilia hypothesis asserts that there is an inherent bond between human beings and nature, suggesting that exposure to nature is beneficial for human health.²³

Research points to the value of biophilia interventions, particularly in pain management. In one study of postoperative pain, patients were randomly assigned to

rooms with nature images, abstract art, a blank panel, or nothing in the room. Patients in rooms with nature images reported the least anxiety and were significantly more likely to switch from stronger to weaker painkillers than patients in the other environments.²⁴ In addition, cardiovascular benefits have been observed with Shinrin-Yoku or “Forest Bathing,” the practice of immersing oneself in nature.²⁵ Shinrin-Yoku is associated with blood pressure and heart rate lowering effects as well as increased reports of overall relaxation. Exposure to a forest-themed nature video has demonstrated similar effects.²⁶

Music

Music as a relaxation therapy has been documented as beneficial across many different conditions and physiological states. In one study of patients in a hospital’s Coronary Care Unit, those who were exposed to music therapy had a reduction in physiological signs of stress over patients with no intervention.²⁷ Music has also been shown to alleviate agitation in those suffering from dementia and to decrease the stress of patients undergoing procedures such as colonoscopy or surgery.²⁸ A 2016 Cochrane Review of 52 trials studying the effects of music interventions in cancer patients noted a significant reduction of pain.²⁹

Guided Imagery

Guided imagery, in which a narrator guides patients through breathing, visualization, and other relaxation techniques, is another useful tool to promote relaxation. In one study of patients undergoing bariatric videolaparoscopy surgery, those who were randomized to participate in a guided imagery session had statistically less anxiety and lower cortisol levels after exposure than the patients with no intervention.³⁰ The technique also demonstrated promising results in a study of patients undergoing hemodialysis; those who participated in guided imagery intervention experienced a significant decrease in both anxiety and depression.³¹ Guided imagery has been shown to ease discomfort, as it helps patients enter into a relaxed state of mind and detach from the pain.³² Research indicates that guided imagery is also helpful for patients dealing with chronic conditions such as arthritis, fibromyalgia, and nerve pain.³³

Sleep Content

As more information emerges on the impact of poor sleep, hospitals strive to minimize sleep disruption. While some factors that impair patients’ sleep in hospitals are beyond control, most noise and lighting disruptions can be alleviated.³⁴ Special video content can use dark screens to limit light in the room and emit ambient sounds to help mask hospital noise. A 2005 study showed that individuals exposed to ICU noise had longer periods of sleep with fewer disruptions when white noise was used to mask sound.³⁵ A 2016 study revealed similar results with patients in a Coronary Care Unit, with a longer average sleep time observed after white noise was introduced.³⁶

Conclusion

A Cost-Effective Solution for the Stress of Pain and the Pain of Stress

A hospitalization is a major life event, exposing a patient to a variety of stressors simultaneously. Hospitalization-related stress negatively impacts the patient experience and can be a costly problem for hospitals. Stress is associated with poorer outcomes including increased risk of readmissions, and perceived stress is a significant predictor of lower patient satisfaction. A growing evidence base shows the value of relaxation therapies to combat the effects of stress. Nature scenery, music, guided imagery and sleep programming can help hospitals address some of the most common stressors impacting the patient experience by reducing anxiety, easing pain and discomfort, masking noise, and improving sleep. Studies on focused applications of relaxation content for specific conditions point to improvements in clinical measures; even more compelling is new research which shows the relaxation response may alter gene expression for enduring impact.

As television is already core to the patient experience, hospitals can maximize the impact of TV as a tool to combat stress by adding relaxation videos and a hospital-wide interactive system to deliver the content at the patient’s request. Equipping patients with easy-to-use technology and content provides choice, empowerment, and positive experiences that promote relaxation, improve outcomes and boost levels of self-efficacy in managing stress.

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TeleHealth Services, a provider of interactive patient care solutions, recognizes the importance of offering high quality relaxation and sleep-enhancing content for patients. One of its content partners, the Sharecare Windows, delivers an extensive video library for relaxation, meditation, breathing exercises, therapeutic yoga, sleep and background music to create a restful and peaceful environment. Their sleep-enhancing videos were created in collaboration with Stanford Health Sleep Medicine Center to create ultra-low-light videos that promote restful and restorative sleep.

Sharecare Windows videos create an immediate and beneficial impact especially in stress reduction. Images of forests, beaches, mountains, sunsets and starry skies, paired with soothing instrumental music, provide patients with a mental escape from the hospital and help them feel connected to a natural environment. The videos are accompanied by naturally occurring background sounds, enhancing the patient experience with spectacular images that engage and relax the patient.

About the Authors:

Claire Thevenot is a registered nurse with more than 13 years of patient care, quality improvement, and program management experience. As a former oncology nurse, she has a unique understanding of the specific challenges hospitals face when it comes to engaging and educating patients. In her role as Clinical Outcomes Manager for TeleHealth Services, Claire uses her firsthand knowledge of clinical workflows to help her hospital clients improve patient satisfaction. Her colleague, Client Outcomes Manager, **Amy Mora**, is a registered health educator with an extensive academic background in health behavior, health education, and health administration. She is a LEAN Six Sigma Green Belt and a former EMT-Intermediate. She has been working at TeleHealth Services for more than four years to support her hospital clients in their efforts to create better patient experiences and health outcomes. You can read their patient experience stories at: www.telehealth.com/categories/blog.

About Telehealth Services:

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Phone: (800) 535-2459 • info@telehealth.com • www.telehealth.com

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