

Relaxation Technique to Ease Dyspnea: A Tool for Oncology Nurses

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Mr. B, a 68-year-old man with a seven-year history of lung cancer in remission, was admitted to the oncology unit for increasing dyspnea and extent of disease workup. He reported nonspecific symptoms that included shortness of breath on exertion and sometimes without exertion, causing him to stop participating in some of his activities, difficulty sleeping, and a lack of appetite. He also was worried about the cancer coming back. “Waiting and not knowing,” he said, was very stressful. Mr. B’s physician ordered supplemental oxygen at the rate of 5 L by nasal cannula and scheduled diagnostic imaging examinations, laboratory tests, and a possible bronchoscopy.

The morning after admission, Mr. B experienced significantly increased dyspnea. Because he was so short of breath he had postponed going to the bathroom as long as he possibly could and called for his nurse as he was leaving the bathroom. He was very apprehensive about his shortness of breath and appeared to be using a great deal of effort to breathe, telling his nurse “I can’t catch my breath.” To help ease Mr. B’s breathing, the nurse had him sit upright in the bedside chair and asked him to relax and breathe normally. However, Mr. B’s high level of anxiety, caused by his difficulty breathing and his fears about a possible lung cancer recurrence, made following instructions challenging. His entire body was tense, and he was expending needed energy by leaning forward, grasping the arms of the chair. Being told by the nurse to relax and breathe deeply had the opposite effect; Mr. B. became even more anxious and dyspneic.

One of the resources available to the nursing staff in the hospital was a stress-

management nurse available to work with patients and families. Noticing that the nurse was on the unit, Mr. B’s oncology nurse described his situation and asked the stress-management nurse to visit Mr. B to see if stress reduction techniques might help improve his breathlessness.

Etiology

Dyspnea is a subjective sensation of breathing difficulty. It reflects patients’ reactions to the feeling of not being able to get enough air (Matthews, 2005). Risk factors are multiple and related to disease, treatment, and lifestyle events (Merck Manuals Online Medical Library, 2007) (see Figure 1). The frequency of dyspnea in patients with cancer varies depending on the setting and extent of disease. The National Cancer Institute’s ([NCI], 2007) review of the literature noted a study that reported 49% of a general cancer population experienced breathlessness and 20% rated it as moderate to severe. Patients with advanced cancer experience this symptom more frequently and intensely than patients with limited disease.

Studies have demonstrated that no direct relationship exists between dyspnea and the degree of impairment in lung function. Instead, the experience and intensity of dyspnea is influenced by patients’ behavioral styles and emotional states. Breathing is influenced by behavioral control mechanisms in the

cortical and subcortical centers in the brain, and anxiety, anger, and depression may lead to increased ventilatory effort and dyspnea. Patients who generally are independent and adaptable can tolerate ventilatory loads with relatively few symptoms of dyspnea, while others who are more dependent and anxious may experience severe dyspnea with relatively small increases in ventilatory impedance (American Thoracic Society, 1999).

Assessment

No general agreement exists on what constitutes the best instrument for assessing dyspnea. The multidimensional nature of dyspnea must be considered to obtain an accurate assessment. The evaluation of patients with dyspnea begins with a thorough history of the symptom. Symptom onset and quality, precipitating and relieving events, and responses to medications should be reviewed. Measuring oxygen saturation can determine if patients are hypoxic. Physical findings may include tachypnea, use of accessory muscles with breathing, retraction of intercostal spaces, flaring of nostrils, clubbing of digits caused by chronic hypoxemia, cyanosis, pallor, confusion, restlessness, and difficulty concentrating (Matthews, 2005). Diagnostic tests may include chest imaging, computed tomography, complete blood counts, and oxygen saturation at rest and with exercise.

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Acute Onset (within minutes)

- Pulmonary
- Pneumothorax
- Pulmonary embolism
- Bronchospasm
- Asthma (with previous history)
- Reactive airway disease (with previous exposure)
- Foreign body
- Toxic inhalation (e.g., chlorine, hydrogen sulfide)
- Cardiac
- Acute myocardial ischemia or infarction
- Papillary muscle dysfunction or rupture
- Ventricular dysfunction
- Cardiogenic pulmonary edema
- Other
- Diaphragmatic paralysis
- Anxiety disorder—hyperventilation

Subacute Onset (within hours or days)

- Same as acute onset, with addition of
 - Pneumonia
 - Acute bronchitis
 - Poisoning
 - Salicylate
 - Ethylene glycol

Nonacute Onset (hours to years)

- Pulmonary
- Obstructive lung disease
- Restrictive lung disease
- Interstitial lung disease
- Pleural effusion
- Cardiac
- Ventricular dysfunction
- Pericardial effusion and tamponade
- Other
- Anemia
- Physical deconditioning

Figure 1. Causes of Dyspnea

Note. From *The Merck Manual of Diagnosis and Therapy* (18th ed., p. 357), by M.H. Beers (Ed.), 2006, Whitehouse Station, NJ: Merck and Company, Inc. Copyright 2006 by Merck and Company, Inc. Available at www.merck.com/mmpe. Reprinted with permission.

Pulmonary function tests generally have a limited role in the assessment of dyspnea (National Cancer Institute, 2007).

Mr. B had several possible risk factors for dyspnea relating to disease, physical deconditioning, and anxiety. The stress-management nurse entered Mr. B's room and made a prompt physical assessment. Objective signs of respiratory distress included rapid, shallow, labored respirations (rate of 36), pulse rate of 96, and pulse oximetry at 74%. It was clear that

Mr. B was exerting a tremendous amount of effort to breathe but that his breathing was ineffective. His fear and muscle tension were increasing his need for oxygen, further challenging his already poor oxygen availability.

General Management of Dyspnea

Symptomatic management of dyspnea is based primarily on oxygen therapy, drug therapy, and general measures, including behavior modification, psychosocial support, and counseling (National Cancer Institute, 2007). The focus here will be nonpharmacologic interventions that have been characterized as likely to be effective in managing dyspnea. These interventions include the following (Oncology Nursing Society, 2007; American Thoracic Society, 1999).

- Directing cool air at the patient's face or nose with a fan and lowering room temperatures
- Incorporating cognitive-behavioral approaches to promote relaxation and stress reduction
- Providing support resources (educational, emotional, and psychosocial) and referrals for patients and caregivers

Relaxation Techniques to Ease Sensation of Dyspnea

The stress-management nurse realized that Mr. B's sensation of breathlessness was making him feel panicked, which increased his anxiety and need for oxygen, worsening his dyspnea. At that point, breaking this cycle was crucial (Lung Cancer Alliance, n.d.b). In consultation with Mr. B's oncology nurse and with Mr. B's permission, the stress-management nurse coached Mr. B in how to relax using a structured relaxation technique as a tool to help Mr. B learn to control and regulate his breathing.

Mr. B was asked to sit back in his chair and place his feet flat on the floor. He was encouraged to feel the contact of the chair, let the chair hold and support him, and let the floor support his feet and legs. He was told, "You don't need to hold yourself, let the floor and the chair do the work!" Other positive

relaxation suggestions such as, "Let your muscles soften" and "Let your muscles be warm and heavy," were spoken in a calm, soothing voice. He was reminded to relax his arms, lean back in the chair, and ease his feet onto the floor. Mr. B appeared to respond to the relaxation instructions when he was able to maintain this position and relax his tense muscles.

Next, the stress-management nurse began a relaxation breathing exercise. After asking Mr. B's permission, the stress-management nurse placed one hand on the patient's abdomen and asked if Mr. B could feel the touch of the hand. When Mr. B replied that he could, he was then instructed to aim his breath toward his abdomen, using the sensation of the contact of the hand as a way to direct the breath deeper into his lungs. The desired outcome is to have the patient's abdomen rise on inhalation and fall with exhalation. The technique of aiming breathing toward a hand placed on the abdomen is a means to help patients "catch their breath" (Seskevich, Crater, Lane, & Krucoff, 2004). As the teaching session continued, an analogy was shared with the patient. "When we play catch with a ball, we raise one of our hands and catch the ball. So putting a hand on the belly and aiming the inhaled breath toward that hand can help you 'catch your breath'."

As Mr. B was able to focus his breathing as coached he was given positive encouragement. "You are doing great, now soften the breathing effort, let your belly be soft," the stress-management nurse said. He began to realize that he didn't have to work so hard to get air, it was safe to soften his breath, and as he aimed his breath toward his abdomen, his lungs were filling with good air, pushing down on the diaphragm and causing his abdomen to rise toward the hand. Mr. B's abdomen became less tense, and his respirations began to move more slowly and paced. Mr. B continued to feel better over time, with an apparent decrease in dyspnea, fear, and anxiety and stated "I'm breathing free and easy." The oncology nurse who was monitoring his oxygen saturation levels was able to validate Mr. B's statement by reporting that his pulse oximetry numbers had steadily improved during the relaxation breathing exercise as indicated: 74, 79,

Because tense muscles use oxygen faster than relaxed muscles, it is important to try and stay relaxed.

To relax your shoulders and arms

- Rotate your shoulders in a circle a few times or shrug them up and down.
- Practice relaxing your shoulders and arms throughout the day.
- Try to be aware of times when you are tense so that you can relax before you become short of breath.
- Try the following visualization techniques to relax.
 1. Find a comfortable position and take a few controlled breaths.
 2. Begin to imagine a setting that relaxes and calms you—the setting can be anywhere or anything from watching the waves at the beach to relaxing in your bed at home.
 3. Stay focused on the setting, breathe, and relax your body.
- Feel the tension leave your body.

There are many books and tapes about visualization on the market today. You may want to check your local library for one that will work for you.

Figure 2. Relaxation

Note. From "Symptom Management—Dyspnea," by Lung Cancer Alliance, n.d. Retrieved December 6, 2007, from www.lungcanceralliance.org/facing/dyspnea.html. Copyright Lung Cancer Alliance. Reprinted with permission.

85, 89, 92, and 94 over a period of six months. The benefit of this technique also was demonstrated by Mr. B's maintaining a natural breathing pattern that was regular in rate and pattern. Mr. B

was encouraged to practice this focused breathing technique for a few minutes each day so he would be comfortable using it when he felt breathless. He was asked to silently give himself permission to claim this quiet period (Lung Cancer Alliance, n.d.a). Figure 2 describes a simple relaxation technique.

Conclusion

Dyspnea is a complex symptom that varies greatly among individual patients and is defined as the subjective experience of unpleasant or uncomfortable respiratory sensations. A strong behavioral component is associated with the experience of dyspnea. It can increase patient stress, and stress can make dyspnea worse. Nonpharmacologic interventions to promote relaxation and provide instruction in breathing control may reduce patient stress and increase the ease and effectiveness of respiration and gas exchange. Nurses should be familiar with some simple stress management approaches, such as relaxation breathing, that they can use independently to assist an anxious patient with ineffective breathing.

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