Dyspnea and Palliative Care in Advanced Chronic Obstructive Pulmonary Disease

A Rapid Review

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Dyspnea is the most common and activity-limiting symptom for those with chronic obstructive pulmonary disease (COPD). Treatment is complex, palliative care (PC) dyspnea relief interventions are poorly understood, and PC remains underutilized in COPD despite national guidelines and recommendations. The purpose of this rapid review was to explore the concept of dyspnea and role of PC through the lens of providers, caregivers, and patients with COPD. A systematic approach for synthesis was used to identify 13 articles published between January 2018 and October 2023. Team members compared data via visualization and theme clustering to identify key conclusions describing operationalization of dyspnea, management, and PC implications. Dyspnea operationalization was challenging, with inconsistent measurement and terminology. Dyspnea was a significant burden in COPD and contributed to complexity of treatment. Opioids were used most often to treat dyspnea, but provider perspectives and biases can influence treatment decisions and perceptions of opioid therapy by the patient and caregiver. Evidence-based clinical practice guidelines and policies are needed to clarify the use of opioid therapy for dyspnea management to reduce stigmatization and barriers to treatment. Provider education should emphasize a multipronged approach to treatment of dyspnea in COPD with integration of PC early in the care continuum.

KEY WORDS
COPD, advanced lung disease, breathlessness, dyspnea, opioid therapy, palliative care, rapid review

ABBREVIATIONS
COPD: chronic obstructive pulmonary disease, ER: extended release, mMRC: modified Medical Research Council, PC: palliative care, SR: sustained release

Dyspnea, the subjective sensation of difficult breathing, is the most common and activity-limiting symptom for those with advanced chronic obstructive pulmonary disease (COPD).1,2 Chronic obstructive pulmonary disease is a heterogeneous lung condition with no cure and is associated with chronic symptoms such as dyspnea and cough due to progressive airflow obstruction.3 As COPD progresses and airway pathology advances, symptoms escalate and become increasingly debilitating.

Dyspnea is described as breathlessness, suffocation, shortness of breath, or air hunger.4 The dyspnea experience is unique to each individual and influenced by disease...
pathology, individual interoceptive sensitivity, emotions, and previous experiences with dyspnea or situations that may have restricted breathing. Although dyspnea cannot be eliminated in advanced COPD, symptom palliation is possible. Dyspnea treatment is complex and individualized, and there remains insufficient understanding of dyspnea relief interventions.

Palliative care (PC) is the responsibility of all clinicians and disciplines caring for the seriously ill. The 2023 Global Initiative for Chronic Obstructive Lung Disease guidelines recommend integration of PC teams in the management of end-stage COPD. Despite these recommendations, PC remains underutilized and is not integrated routinely in care planning for the patient with advanced COPD and their caregiver. There is a lack of high-quality evidence on PC interventions in COPD, particularly management of dyspnea. Thus, this rapid review aimed to explore the concept of dyspnea and the role of PC through the lens of both the provider and the patient with advanced COPD and recommend best practices and guidelines to inform practice, research, and policy in this area.

METHODS

Search Strategy

This study was registered in the International Prospective Register of Systematic Reviews (PROSPERO), CRD42024522028. A systematic approach guided by Cochrane Rapid Review Methods was used to ensure rigor and accuracy in the conduct of this rapid review. This methodology follows 6 steps: (1) topic refinement, (2) eligibility criteria, (3) searching, (4) study selection, (5) data extraction, and (6) synthesis. Following completion of steps 1 and 2 (topic refinement and determination of eligibility criteria) by the study team, an academic medical center librarian developed the search strategy (Supplement A, http://links.lww.com/JHPN/A99), optimized term selection, and utilized Covidence systematic search software for group organization and dissemination (Figure).

Inclusion and Exclusion Criteria

Study inclusion and exclusion criteria were developed during initial meetings and refined collaboratively with the clinical expertise of the study team. The following inclusion criteria were applied during the search process: studies conducted between the years of 2018 and 2023; included a PC team or discussed PC; included patients with COPD or providers who cared for patients with COPD; addressed dyspnea or breathlessness as a concept, target, or outcome measure; and quantitative, qualitative, and mixed-methodology studies. Exclusion criteria included study protocols, feasibility studies, editorials, dissertations, evaluation of curriculum or educational interventions for students, case studies, studies that focused on multimorbidities or grouped cardiorespiratory diseases together without a focus on COPD, and secondary data analyses.

Data Extraction

All team members participated in the systematic extraction of data from the included studies. An evidence table was developed to chart data and included author, year, study design, purpose, sample size, population (provider or patient), intervention and dosing, care team member, dyspnea terminology or definition, dyspnea measurement tool(s), findings, and limitations (Table 1). Each team member independently extracted data into the evidence table. Following data extraction into the evidence table, team members compared data via visualization and clustering of data themes to develop key conclusions describing operationalization of dyspnea, dyspnea management, and PC implications.

RESULTS

Study Characteristics

The initial literature search yielded 934 results imported for screening, with 264 duplicates removed. The remaining 670 titles and abstracts were screened to identify articles for full-text review. Following first pass screening of titles and abstracts, 645 references were removed. A total of 25 full-text articles were reviewed and screened to determine if they met the eligibility criteria. Thirteen studies met the inclusion criteria and included quantitative (n = 9), qualitative (n = 3), and mixed-methods (n = 1) designs. Each study was conducted with individuals with COPD (n = 5), patient and caregiver dyads (n = 2), providers who cared for patients with COPD (n = 5), or both (n = 1), included dyspnea as a variable or concept and discussed PC. Studies were conducted in the United States (n = 9), the Netherlands (n = 2), Spain (n = 1), and Australia (n = 1).

Identified Themes

OPERATIONALIZATION OF DYSPNEA

Dyspnea terminology varied, with most studies (n = 7) using both “dyspnea” and “breathlessness” terms or exclusively “dyspnea” (n = 4) or “breathlessness” (n = 2). Study authors noted that dyspnea measurement is challenging and complex, thus not easily captured on a quantitative scale. One article focused on the lack of operationalized dyspnea measures with a population of nurses in a PC setting reporting that the Respiratory Distress Observational Scale is an option for nursing assessment of dyspnea when a patient cannot self-report their symptoms.

Although all studies included dyspnea as a concept, dyspnea measurement differed between the studies. The modified Medical Research Council (mMRC) was utilized in 6 studies, the modified Borg scale in 1 study, Edmonton
Symptom Assessment System–Revised (ESAS-r) in 2 studies, and the COPD Assessment Test in 3 studies. Respiratory quality of life was assessed with validated measures such as the Clinical COPD Questionnaire and the St George’s Respiratory Questionnaire in 2 studies. One study noted the mMRC was used as a discriminatory dyspnea measurement tool compared with the ESAS-r for symptom assessment. One study used patient-reported dyspnea, but did not specify what scale or assessment tool was utilized.

**DYSPNEA TREATMENT**

Dyspnea was reported to be a prevalent concern for COPD PC and was the most burdensome symptom for many patients. Palliative care and management of breathlessness in advanced COPD were noted to be challenging, and both nonpharmacological and pharmacological dyspnea treatments were discussed. Nonpharmacological interventions were discussed in 4 studies and included a fan, noninvasive ventilation, oxygen, advice, sleep hygiene, equipment to assist with mobility and safety, and breathing techniques.

Eight studies reported on pharmacological interventions, including oral morphine, methadone, oxycodone, and nebulized fentanyl. Prevalence of reported opioid usage for dyspnea treatment varied in reports, from 43%, 89%, 72%, and 83.6%. Pharmacological management and dosing of interventions varied between studies, with 1 study reporting 10 mg of sustained release (SR) or extended release (ER) oral morphine twice daily for 4 weeks with the possibility of increasing to 3 times daily after 1 to 2 weeks. One study examined the use of nebulized fentanyl on dyspnea relief in advanced COPD with 25 μg of fentanyl in 2 mL of saline. When reported, dosing schedules noted starting with a lower opioid dose with titration as needed.

Several studies explored both provider and patient perspectives on treatment, mostly around the use of opioids to treat dyspnea. Gainza-Miranda et al reported that patients viewed opioids as helpful in dyspnea relief. One study interviewed participants and carers to see how effective they perceived a regular low-dose SR morphine assisted...
<table>
<thead>
<tr>
<th>First Author and Title</th>
<th>Population and Sample Size</th>
<th>Caregiver</th>
<th>Intervention and Dosing</th>
<th>Care Team Member</th>
<th>Dyspnea Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birkholz and Haney(^{13})</td>
<td>39 nurses</td>
<td>N/A</td>
<td>Education program: palliative nurse educator, 6 videotaped simulation scenarios, activities to apply knowledge and apply the assessment tool</td>
<td>Rural hospital nurses and nurses who provide EOL care</td>
<td>RDOS</td>
</tr>
<tr>
<td>Broese et al(^{14})</td>
<td>130 pulmonologists, 305 GPs</td>
<td>PC-trained pulmonologists were more likely to discuss caregiver burden with patients</td>
<td>Pulmonologist, GP</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Broese et al(^{15})</td>
<td>24 providers, 7 pulmonologists, 13 nurses (9 COPD nurses, 4 PC nurses), 4 GPs</td>
<td>Authors thanked caregivers who participated in the study, but their role was unclear in this article as the article focused on implementation</td>
<td>Pulmonologists, nurses (including COPD nurses and PC nurses), and GPs</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Elbehairy et al(^{16})</td>
<td>45 patients with COPD</td>
<td>N/A</td>
<td>Advanced dyspnea clinic interventions: smoking cessation, sleep hygiene, self-management plan, pharmacological management (opioids and methotrimeprazine), nutrition, PC referral, oxygen therapy, EOL discussion</td>
<td>Nurse practitioner, PC physician specialist</td>
<td>MRC dyspnea scale, 10 ESAS-r</td>
</tr>
<tr>
<td>Ferreira et al(^{17})</td>
<td>18 community-dwelling individuals—COPD and their carers (total of 9 patients, 9 carers)</td>
<td>Breathlessness an &quot;emotional challenge&quot; for caregiver; constant state of worry. Carers felt responsible for patient well-being</td>
<td>Study nurses for data collection (interviews with patient and carer)</td>
<td>mMRC</td>
<td></td>
</tr>
<tr>
<td>Ferreira et al(^{18})</td>
<td>13 patients and 9 caregivers</td>
<td>Caregiver source of support for patients, facilitates coping with side effects, adherence to morphine treatment. Subthemes included lack of knowledge</td>
<td>Clinicians and researchers who cared for patients with COPD-related breathlessness, Study nurses for data collection, physicians who prescribed medications</td>
<td>Qualitative descriptors</td>
<td></td>
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</tbody>
</table>

(continues)
with breathlessness associated with COPD. Participants overwhelmingly reported it well-tolerated. Two studies acknowledged the importance of attitudes and beliefs on treatment choices or outcome. One reported an influencing facilitator for clinician recommendation was the belief that a fan had benefit, whereas a barrier was the belief the patient would become reliant on it. Ferreira et al noted that clinician support of morphine influences patient decision-making, recommending clinician communication to increase both patient and caregiver acceptance of the medication with the aim of reducing chronic breathlessness.

### CAREGIVERS

Caregivers were represented in 3 studies and burden on caregivers was discussed in 4 studies. Broese et al investigated the frequency providers discussed caregiver burden and recommended PC training for providers to be empowered to discuss caregiver burden. One study explicitly explored the experience of breathlessness on the caregiver and found carers felt that their loved one’s breathlessness had become all-consuming or had permeated all aspects of their lives, presenting an

### Table 1

<table>
<thead>
<tr>
<th>First Author and Title</th>
<th>Population and Sample Size</th>
<th>Caregiver</th>
<th>Intervention and Dosing</th>
<th>Care Team Member</th>
<th>Dyspnea Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gainza-Miranda et al</td>
<td>83 patients, all with a primary caregiver</td>
<td>Caregivers were significantly overburdened; authors found significant palliative need related to caregiver overburden</td>
<td>Opioid therapy noted in 72% of participants, with 86% morphine, 8.5% fentanyl, 4% methadone, 1.5% oxycodone. Morphine dose baseline 16.96 mg with mean dose 5.6 mg. Dosing for other medications not reported</td>
<td>Multidisciplinary care team, PC support team, primary care team, hospital team, pulmonary unit, and hospital PC units</td>
<td>MRC dyspnea scale, SGRQ, CAT, 10 ESAS-r</td>
</tr>
<tr>
<td>Henoch et al</td>
<td>598 patients with COPD</td>
<td>N/A</td>
<td>Dyspnea relief attributed to morphine as a rescue medication in specialized PC setting, but timing and dosing not specified</td>
<td>Specialized PC team and hospital end-of-life team</td>
<td>mMRC</td>
</tr>
<tr>
<td>Higgins et al</td>
<td>73 patients with COPD</td>
<td>N/A</td>
<td>Preservative-free nebulized fentanyl citrate 100 μg/2 mL vial</td>
<td>Unclear—physician prescribers</td>
<td>Objective measures (respiratory rate, oximetry)</td>
</tr>
<tr>
<td>Luckett et al</td>
<td>49 providers, included respiratory clinicians (nurses, medical, allied health)</td>
<td>N/A</td>
<td>Handheld fan, no dosing specified</td>
<td>Nurses, medical allied health, physicians</td>
<td>N/A</td>
</tr>
<tr>
<td>Noppe et al</td>
<td>9 physicians, 93 COPD patients</td>
<td>N/A</td>
<td>N/A</td>
<td>Pulmonologists</td>
<td>mMRC</td>
</tr>
<tr>
<td>Politis et al</td>
<td>137 practitioners</td>
<td>N/A</td>
<td>N/A</td>
<td>GPs</td>
<td>mMRC</td>
</tr>
<tr>
<td>Verberkt et al</td>
<td>124 patients with COPD</td>
<td>N/A</td>
<td>10 mg regular, low-dose, sustained release oral morphine twice daily for 4 wk, with possibility to increase to 3 times daily after 1-2 wk</td>
<td>Pulmonary rehabilitation and hospital setting</td>
<td>COPD assessment test, CAT</td>
</tr>
</tbody>
</table>

*Abbreviations: CAT, COPD Assessment Test; COPD, chronic obstructive pulmonary disease; EOL, end of life; ESAS-R, Edmonton Symptom Assessment System—Revised; GP, general practitioner; mMRC, modified Medical Research Council; MRC, Medical Research Council; PC, palliative care; RCT, randomized controlled trial; RDOS, Respiratory Distress Observation Scale; SGRQ, St George’s Respiratory Questionnaire; SR, sustained release.*
emotional challenge for the carer. In this study, the carer reported that despite mutual adaptation and comanagement of breathlessness, breathlessness contributed to the feeling of their “world shrinking.”

The same authors published a subsequent paper (also included in this review) exploring the patient and caregiver experience with morphine for breathlessness, reporting that the caregiver can facilitate this treatment, either by helping to manage side effects (such as constipation) or assisting with the process of obtaining a prescription (noting discussions and negotiations between patients, caregivers, research teams, and general practitioners). Here, the authors explored synchronicity between the caregiver and patient, finding that patients had some concerns about morphine, compared with their caregivers who had less concerns and expressed trust and hope for a medication that could help reduce breathlessness in their loved one. Caregiver perceptions of the effect of morphine on breathlessness matched patient descriptions, but caregivers valued practical outcomes from morphine (such as a reduction in hospital admissions) more than the patient. Patients and caregivers both valued even small improvements in functional gains from treatment of breathlessness.

HEALTH CARE TEAM
The studies included various care team member roles: nurses (n = 2), pulmonologists (n = 3), multidisciplinary PC teams (n = 1), chaplain (n = 1), and general practitioners or clinicians (n = 2). The role and perceived value of nurses and specialty PC providers was discussed in several articles, with Broese et al reporting that providers valued working with a nurse specialist for PC.

The specific impact of the health care team on dyspnea was addressed in several articles. Breathlessness or dyspnea was more frequently relieved when a specialized PC team was utilized, compared with a general hospital setting. Two studies reported effects on hospitalizations and emergency department (ED) visits. One study evaluated a specialized ambulatory clinic on refractory breathlessness in COPD, led by a PC specialist, nurse practitioner, and respiriologists. Patients who participated in this newly established dyspnea clinic demonstrated a reduction in annual ED visits. Effectiveness of a multidisciplinary PC team as a care model intervention was evaluated in another study, where researchers found reductions in ED visits and hospital admissions and higher rates of patients dying at home, which they attributed to their coordinated care model.

GAPS AND BARRIERS
Several barriers and gaps were identified from the data. Confusion around roles and responsibilities, lack of formalized guidelines, and lack of knowledge on explicit criteria for dyspnea treatment and PC were found to be barriers. Studies reported on provider levels of comfort with PC provision or referrals, with many general practitioners reporting discomfort with offering palliative approaches themselves or starting a PC discussion. Difficult conversations were a barrier or end of life had not been discussed, as providers found it difficult to have conversations in nonoptimal settings (such as acute care) or preferred to hold conversations with a colleague present to help them.

Broese et al reported provider barriers of unstructured or lack of formal guidelines, conducting difficult conversations in nonoptimal settings, and provider time. Lack of role clarity was also a barrier to implementation of a nonpharmacological intervention for breathlessness. The complexity of tools used to identify COPD patients who may be eligible for PC was a barrier for referrals. Finally, both providers and patients/caregivers reported discomfort when considering opioids to treat breathlessness.

Another barrier was the lack of formal education and guidelines for PC. Five included studies explored provider perspectives, reporting on comfort with PC and gaps in PC knowledge and training specific to PC in COPD, particularly for dyspnea. Providers recognized their barriers and reported receptivity and a desire for PC education. Specific needed areas for education included PC communication, clinical management of dyspnea in COPD, nonpharmacologic interventions such as the fan, and difficult conversations. Training sessions including role-play were reported to increase provider self-efficacy with PC provision. One study noted the need for caregiver education, with lack of education contributing to frequent distress from breathlessness. Two studies found positive effects from PC education on clinical practice change. Politis et al found that postgraduate specialist PC training increased the likelihood of provision of PC, including opioid prescription. Another study reported that pulmonologists who received training in PC were more likely to discuss PC topics, emphasizing the importance of PC education.

DISCUSSION
This rapid review provides insight into the concept of dyspnea and the role of PC through the lens of both the provider and patient with advanced COPD. As anticipated, dyspnea was found to be a significant burden in COPD and contributed to the complexity of treatment of COPD. We identified themes in the operationalization of dyspnea, dyspnea management, and PC implications.

Operationalization of Dyspnea
Dyspnea measurement continues to be challenging for providers and researchers, despite being one of the most common and distressing symptoms in advanced COPD. Dyspnea measurement is complex by nature and ideally should integrate the 3 domains of dyspnea (sensory-perceptual, affective, and impact domains). This becomes further
complex as escalating illness has the potential to impact the ability of the patient to self-assess and report. With more than 40 tools to assess dyspnea, there remains no consensus nor preferred assessment tools. A recent review by Campbell et al. acknowledged that many dyspnea relief interventions are accepted through pragmatic use or anecdotal evidence due to lack of measurement in dyspnea relief interventions, recommending consistent addition of dyspnea measurement.

Consistent with other studies, articles included in this review utilized a variety of dyspnea assessment tools to quantify the intensity and resulting distress caused by dyspnea. The MRC or mMRC breathlessness scale was used most commonly. This scale has been found to be more discriminating than spirometry measurements; however, it does not address dyspnea at rest nor measure breathlessness directly as the modified Borg scale does, both important to consider in PC. The ESAS-r may not be a preferable tool for assessment of symptom severity and response to treatment. An objective assessment tool (such as the Respiratory Distress Observational Scale) may be valuable when a patient cannot self-report but does not encompass the subjective nature of dyspnea. Considerations of limitations of dyspnea measurement tools along with the lack of consistency in dyspnea measurement in our findings, there remains a need for consensus for the measurement of dyspnea in the PC setting. For discriminatory measurement of dyspnea and assessment of functional disability related to dyspnea in the patient with advanced COPD, we recommend the mMRC or modified Borg scale (Table 2).

Dyspnea Management

Both nonpharmacological and pharmacological PC interventions were used for dyspnea management. Clinical dyspnea treatment begins with identification of the pathologic process leading to the symptom, followed by an appropriate therapy (Table 2). Nonpharmacological treatment recommendations included use of a fan, breathing techniques, relaxation/meditation methods, sleep hygiene, self-management plans, nutritional advice, education, and supplemental oxygen. These interventions were more effective when given in conjunction with opioids.

It is well-documented that opioid medications can reduce dyspnea. Endogenous and exogenous opioids modulate cortical activity and alter the central processing of afferent and efferent sensory input to offer dyspnea relief. As expected, we found that pharmacological management for dyspnea was primarily opioids, with the most used being morphine. Morphine was given orally in the form of immediate release or ER as well as nebulized fentanyl. Use of morphine varied between studies in dosing and timing. Clinical guidelines recommend starting patients at low doses and titrating, starting with 5 mg over 4 hours up to 30 mg/d (immediate release) and 15 mg/g up to 30 mg/d (SR). As there was no standardized dosing noted in the studies, and dosing varied based on provider comfort and experience, this was identified as an area for future research. Despite known effectiveness of long-acting bronchodilators for dyspnea control and relief in COPD, they were mentioned in only 2 studies, with one study reporting 11% of general practitioners using them in treatment plans.

Some practitioners expressed hesitations or concerns about adverse effects of the use of opioids for dyspnea. This supports the need for enhanced education and clear guidelines for pharmacological management of dyspnea. Although many practitioners lack experience with prescribing opioids or have concerns about adverse effects, opioids clearly have a role in managing breathlessness in COPD. However, because of the opioid overdose epidemic, strict regulations on prescribing practices and manufacturing of opioids have contributed to downstream shortages and barriers in the treatment of pain and suffering. Federal regulators should consider patient populations in need of pain relief along with PC recommendations on the beneficial uses of opioids to maintain quality of care for patients in pain.

Finally, dyspnea management is not a solitary endeavor. Caregivers have an important role in the management of breathlessness in their loved one with COPD, including adapting to breathlessness, managing exacerbations and overall treatment plans, and facilitating coping with side effects from medications to treat breathlessness. Interestingly, breathlessness negatively impacted both the carer and the patient similarly, with aligned perceptions from dyads. Caregivers can feel responsible for the care and well-being of the patient. Observing a loved one struggle to breathe, while also facilitating the management of dyspnea, is uniquely challenging for the caregiver. The burden on caregivers was explored in several of the included studies and found to be significant, specifically when it comes to the challenges associated with breathlessness management, which they felt “took over their lives.” These findings support the importance of the caregiver in both the perceived experience and the complex management of dyspnea. Finally, providers who were formally trained in PC were more likely to discuss caregiver burden with patients and their caregiver, highlighting the need for enhanced provider training to ideally identify and alleviate some of this burden on the caregiver.

Dyspnea is one of the most distressing symptoms to patients and causes severe suffering and thus should be a priority for PC interventions. Many patients feel powerless in their ability to control their COPD and manage their symptoms, and PC has been shown to improve perceived control of breathlessness. Although the importance and value of PC teams were reflected in these results, access to PC services remains underutilized or unavailable in many care settings. Primary PC can be provided by clinicians without specialized training to help bridge gaps in care. Although
specialty PC is more comprehensive and impactful for symptom improvement, there is a shortage of these teams in the United States and globally.29

Strengths and Limitations
This review has several strengths and limitations. First, to our knowledge, this is the first rapid review to explore the operationalization and management of dyspnea for advanced COPD in the PC setting through the lenses of the provider, patient, and caregiver. This creates a unique perspective of the barriers of dyspnea management in this population. Our multidisciplinary research team consisted of senior nurse scientists, a board-certified PC physician, a board-certified advanced practice PC nurse practitioner, an academic medical center librarian, a respiratory physiologist and dyspnea expert, COPD experts, and senior PC experts. Rapid reviews inform clinical or policy decisions timely and efficiently.30 With a faster and less comprehensive

### TABLE 2 Best Practices for Dyspnea Care

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Subjective</th>
<th>Objective</th>
<th>Diagnostic measures</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subjective</strong></td>
<td>Assess dyspnea intensity and impact</td>
<td>Utilize self-report of dyspnea intensity (mMRC or Borg scale)</td>
<td>Determine underlying cause(s)</td>
<td>Energy conservation techniques, inspiratory muscle strength training, acupuncture, psychotherapy, chest wall vibration, relaxation techniques (eg, music therapy and mindfulness), fans to circulate air, elevate the head of the bed, position patient (eg, tripod)</td>
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<tr>
<td></td>
<td></td>
<td>Determine precipitating factors or alleviating factors if applicable.</td>
<td></td>
<td>Double therapy with long-acting B2 agonist and long-acting muscarinic antagonist, triple therapy, inhaled corticosteroids, opioid-based therapy, oxygen therapy</td>
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<tr>
<td></td>
<td>Determine quality of dyspnea</td>
<td>Patients use descriptors such as “sense of suffocation,” “can’t get enough air,” “urge to breathe,” “need more air”</td>
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</tr>
<tr>
<td></td>
<td>Determine associated psychological impact</td>
<td>Intensity of dyspnea correlates with anxiety.</td>
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<td></td>
<td></td>
<td>Many patients develop a fear of dyspnea or associated panic symptoms when feeling an onset of breathlessness</td>
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<tr>
<td></td>
<td>Behavior-related impact of dyspnea</td>
<td>Fearful activity avoidance, self-efficacy for activity</td>
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<td></td>
<td></td>
<td>Satisfaction with dyspnea management strategies</td>
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<tr>
<td><strong>Objective</strong></td>
<td>Inspect respiratory efforts</td>
<td>Determine the use of accessory neck muscles: sternocleidomastoid and trapezius</td>
<td>Chest radiography</td>
<td>Nonpharmacological</td>
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<td>Assess for respiratory effort such as grunting, stridor, and vocal changes</td>
<td>Pulse oximetry</td>
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<td>Computed tomography (if indicated)</td>
<td>Pharmacological</td>
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<td></td>
<td>Assess ability to complete full sentence</td>
<td>Engage in reciprocal conversation and note number of words verbalized before pausing</td>
<td>Blood gases (arterial or venous)</td>
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<tr>
<td></td>
<td>Visualize chest wall movement, shape, and contour</td>
<td>Note retractions of external intercostals and paradoxical abdominal breathing</td>
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<tr>
<td></td>
<td>Auscultate anterior and posterior regions of the chest</td>
<td>Determine prolonged expiratory phase, crackles, rhonchi, and wheezing.</td>
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<tr>
<td></td>
<td>Obtain pulse, respiratory rate, blood pressure, and oxygen saturation.</td>
<td>Note presence of tachycardia, tachypnea, and hypoxia</td>
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<td></td>
</tr>
<tr>
<td><strong>Diagnostic measures</strong></td>
<td>Determine underlying cause(s)</td>
<td>Echocardiogram</td>
<td></td>
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<tr>
<td></td>
<td>Review most recent</td>
<td>Electrocardiogram</td>
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<td></td>
<td></td>
<td>Spirometry and pulmonary function tests</td>
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<tr>
<td></td>
<td></td>
<td>6-Minute Walk Test</td>
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</table>

Abbreviation: mMRC, modified Medical Research Council.
search, it is possible studies were missed in the search. However, the active involvement of the entire research team and inclusion of an academic medical librarian in the search and screening process mitigate this risk. Although the authors acknowledge potential limitations of rapid reviews, we aimed for full transparency in methods to ensure the quality of this review.

**IMPLICATIONS FOR PRACTICE**

- The mMRC can be used for self-report of dyspnea.
- Provider perspectives, beliefs, and biases can influence perceptions of opioid therapy by the patient and caregivers in managing dyspnea.
- Provider education should emphasize a multipronged approach to treatment of dyspnea in COPD, including pharmacological interventions (such as opioids) and nonpharmacological interventions (such as fans, breathing technique, respiratory muscle-strengthening exercises) with integration of PC early in the care continuum.
- Caregivers serve as active agents in management of treatment plans in COPD, particularly in alleviating side effects, so preparing them for this role is essential.

**IMPLICATIONS FOR POLICY**

- Evidence-based policies promoting opioid therapy for dyspnea management will reduce stigmatization, bias, and opiphobia commonly associated with the use of these therapies.
- Current policies and regulations limiting or blocking access to opioid therapy for dyspnea management related to COPD need to be removed immediately to improve the quality of life for patients and their caregivers.
- Caregivers possess an in-depth understanding of dyspnea management for COPD, and policymakers should partner with them when proposing legislation, demonstration projects, and other types of care delivery models.

**IMPLICATIONS FOR RESEARCH**

- Future research should focus on clarifying specialty PC roles and high-quality models and interventions.
- Robust clinical trials are needed with large populations of participants at varying stages of disease complexity to determine efficacy of dyspnea-relief interventions, along with how to optimize interdisciplinary collaboration in the treatment of COPD.
- Studies examining the role of nonpharmacological interventions, particularly for those with opioid-use disorder or strongly opposed to opioid use, require coordinated efforts by multidisciplinary researchers.

**References**


5. Banzett RB, Pedersen SH, Schwartzstein RM, Lansing RW. The affective dimension of laboratory dyspnea: air hunger is more unpleasant than work effort. _Am J Respir Crit Care Med_. 2008;177(12):1384-1390.


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