

## Journal Watch

### A Respiratory Distress Observation Scale for Patients Unable to Self-Report Dyspnea

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Prepared by: Yoko Tarumi, M.D.

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#### Abstract:

**Background:** Standard measures of dyspnea rely on self-report. Cognitive impairment and nearness to death may interfere with symptom distress reporting leading to underrecognition and overtreatment or undertreatment. Previous psychometric testing of the Respiratory Distress Observation Scale (RDOS) demonstrated internal consistency and convergent validity with dyspnea self-report and discriminant validity with pain and no dyspnea. Additional testing was needed with patients unable to self-report. The aim of this study was to establish further the reliability and construct validity of a revised RDOS.

**Methods:** An observational design was used with 89 consecutive patients referred for inpatient palliative care consultation and at risk for dyspnea who had one or more of lung cancer, chronic obstructive pulmonary disease (COPD), heart failure, or pneumonia. Patients were observed and the RDOS scored once each day for up to three days after the initial consultation. Other measures included: dyspnea self-report, neurologic diagnoses, opioid or benzodiazepine use, peripheral oxygen saturation, end-tidal carbon dioxide level, consciousness, cognitive state, nearness to death, and patient demographics.

**Results:** Perfect interrater reliability across data collectors was achieved. No differences in RDOS scoring were found by patient demographics. RDOS was associated with use of oxygen ( $p < 0.01$ ), oxygen saturation ( $p < 0.01$ ) and nearness to death ( $p < 0.01$ ). A significant decrease in RDOS was found over time corresponding with treatment ( $p < 0.01$ ). The reliability of this 8-item scale using Cronbach is  $\alpha$  0.64.

**Conclusions:** Declining consciousness and/or cognition are expected when patients are near death. The RDOS performed well when tested with terminally ill patients who were at risk for respiratory distress, most of whom could not self-report dyspnea. The tool is sensitive to detect changes over time and measure response to treatment. The RDOS is simple to use; scoring takes less than 5 minutes. The RDOS has clinical and research utility to measure and trend respiratory distress and response to treatment.

## Comments:

### Strength/Uniqueness:

1. This is the first study to validate an objective assessment scale for respiratory distress for patients who are unable to quantify their symptoms due to cognitive impairment.
2. As the authors commented, this is the only published behavioral assessment scale of respiratory distress to date.

### Weakness:

1. As the authors have already pointed out, many chronically ill patients with lung disease have mastered their distress, and would deny distress even in the face of signs of pulmonary stress. Therefore, the clinicians need to be aware that the respiratory distress observation scale (RDOS) may potentially lead to over identifying respiratory distress in chronic lung disease patients who are unable to quantify the level of distress.
2. It is also important to be aware that this tool has significant limitation of application in patients on neuromuscular blocking agents or with neuromuscular disease that affect their facial expressions or accessory muscle use.
3. Eighty-seven percent of the sample population was cognitively impaired. Only 22% (n=20) was able to quantify the level of distress (VAS) to identify the positive correlation between VAS and RDOS.
4. The relevance of the reduction of RDOS in day 1 and 2, and the increment of morphine dosing from day 1 to 2, in supporting the validity of RDOS in this sample is unclear.

### Relevance to Palliative Care:

Dyspnea is one of the most common symptoms at the end of life, yet it is common to find patients who are unable to quantify their respiratory distress. The RDOS can be a practical tool to quantify the level of respiratory distress in a population with severe cognitive impairment. However, the clinicians need to be aware of the limitations of this tool.