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## **Distress associated with missed appointments and hospital admission during cancer treatment**

*Study finds tool that measures psychological state to be prognostic for treatment adherence and inpatient hospital admission during radiation therapy*

SAN DIEGO, September 24, 2017 – Psychological distress has long been associated with negative health outcomes for cancer patients, though specific reasons remain unclear. A new study finds that roughly half of all patients who reported having severe distress, which the National Comprehensive Cancer Network<sup>®</sup> (NCCN<sup>®</sup>) describes as “a mix of anxiety and depressive symptoms,” subsequently missed one or more radiation therapy appointments and/or were admitted to the hospital during their treatment, compared with fewer than 20 percent of patients who reported lower levels of distress. The study will be presented today at the [59th Annual Meeting](#) of the American Society for Radiation Oncology (ASTRO).

The emotional side effects of cancer, compared with physical side effects, often are more difficult to diagnose and manage. The NCCN<sup>®</sup> [estimates](#) that significant distress afflicts roughly a third of cancer patients, leading to further symptoms—such as loss of appetite, difficulty concentrating and sleeplessness—that undermine patients’ ability to fight their diseases.

“Focusing on the ‘whole patient’ allows oncologists to deliver the best possible treatment. We know that having cancer is stressful, which means that we have a responsibility to consider a patient’s mental well-being when planning a course of action with them,” said Justin Anderson, lead author of the study and a medical student at the Virginia Commonwealth University School of Medicine in Richmond, Virginia.

“While distress does not directly impact a patient’s disease, it impacts how she or he copes with treatment, such as the ability to follow a doctor’s recommendations and adhere to a treatment plan. Findings

### **AMERICAN SOCIETY FOR RADIATION ONCOLOGY**

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from this study also link higher levels of distress to outcomes specific to radiation oncology, including missed radiation therapy appointments and hospital admission during a course of radiation.”

Study findings are based on 54 patients who received external beam radiation therapy with curative intent in the authors’ radiation oncology department during a one-year period between 2015 and 2016. The average patient age was 59 (range 32-85), and 58 percent of the patients were male.

Researchers evaluated patients’ levels of distress with the [NCCN Distress Thermometer](#), a brief instrument that asks patients to rate “how much distress [they] have been experiencing in the past week including today,” on a scale from 0 (No distress) to 10 (Extreme distress), similar to common pain scales. Distress scores were grouped into four categories: severe (scores of 7-10), moderate (4-6), low (1-3) and none (0). Fifteen percent of the patients in this study reported severe distress, 29 percent reported moderate stress, 29 percent reported low distress and 25 percent reported no distress.

Patients with higher distress scores were more likely to miss appointments during their course of radiation therapy. More than half (57%) of the patients with severe distress scores missed one or more appointments, compared to 18 percent of patients with moderate, low or no distress ( $p < 0.01$ ).

Distressed patients also were more likely to be admitted to the hospital during treatment. Half of the patients with severe distress scores were admitted during treatment, compared with 11 percent of patients with moderate, low or no distress ( $p < 0.01$ ).

Researchers also examined the influence of clinical and demographic factors on levels of patient distress. Neither weight loss during treatment nor duration of time between initial consultation and start of treatment correlated significantly with distress scores. The stage of a patient’s cancer, however, was positively associated with distress, such that each increase in stage predicted an average increase of 0.8 points on a patient’s distress score ( $p < 0.05$ ).

The study demonstrates that the NCCN Distress Thermometer or similar instruments can be useful prognostic tools for radiation oncologists to determine which patients may need additional support during treatment, explained Mr. Anderson.

“Our field has made great advancements in treatments for patients with cancer, but psychosocial factors influence a patient’s ability to receive the appropriate treatment without delay or interruption. Our study demonstrates an association between distress and radiation therapy-specific outcomes, adding to the growing body of evidence emphasizing a need for an interdisciplinary approach to cancer care,” said Mr. Anderson.

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“These findings underscore the importance of devising treatment plans that address mental well-being and are unique to each patient’s individual needs. For example, if a patient is experiencing severe distress — and therefore is at higher risk of missing appointments or being admitted to the hospital — we can offer transportation or housing support.”

The abstract, “The long-lasting relationship of distress on radiation oncology specific clinical outcomes,” will be presented in detail during a news briefing and an oral abstract session at ASTRO’s 59th Annual Meeting in San Diego (full details below). To schedule an interview with Mr. Anderson and/or outside experts, contact ASTRO’s media relations team on-site at the San Diego Convention Center, September 24 through 27, by phone at 703-286-1600 or by email at [press@astro.org](mailto:press@astro.org).

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**ATTRIBUTION TO THE AMERICAN SOCIETY OF RADIATION ONCOLOGY (ASTRO) ANNUAL MEETING REQUESTED IN ALL COVERAGE.**

**This news release contains additional and/or updated information from the study author(s).** Full original abstract and author disclosures available on the final page of this release.

#### **Study Presentation Details**

- Scientific Session: Sunday, September 24, 1:15 – 2:45 p.m. Pacific time, San Diego Convention Center, room 7A/B
- News Briefing: Tuesday, September 26, 1:00 – 2:00 p.m. Pacific time, San Diego Convention Center, room 24C, webcast: <http://www.bit.do/astro17-3>

#### **Resources on Cancer and Radiation Therapy**

- Video: [An Introduction to Radiation Therapy \(Spanish version\)](#)
- ASTRO’s [clinical practice statements and guidelines](#)
- Additional [brochures](#), [videos](#) and [information](#) on radiation therapy from [RTAnswers.org](http://RTAnswers.org)

#### **ABOUT ASTRO’S ANNUAL MEETING**

*ASTRO’s 59th Annual Meeting, the world’s largest scientific meeting in radiation oncology, will be held September 24-27, 2017, at the San Diego Convention Center. The 2017 Annual Meeting is expected to attract more than 11,000 attendees from across the globe, including oncologists from all disciplines and members of the entire radiation oncology team. More than 2,800 abstracts sharing results from clinical trials and other research studies will be presented in conjunction with educational sessions and keynote addresses that underscore the meeting’s theme, “The Healing Art and Science of Radiation Oncology.” Led by ASTRO President Brian Kavanagh, MD, MPH, FASTRO, the 2017 meeting will feature keynote addresses from Richard D. Zane, MD, FAAEM, Chief Innovation Officer for the University of Colorado Health System; Lucy Kalanithi, MD, FACP, widow of Paul Kalanithi, MD, the best-selling author of “When Breath Becomes Air,” with Heather Wakelee, MD, Paul’s oncologist; and Vinay K. Prasad, MD, MPH, an assistant professor of medicine at the Oregon Health & Science University. During the four-day meeting, more than 200 exhibitors*

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*will demonstrate cutting-edge technology and medical device innovations for radiation oncology. Visit us online for more information about [ASTRO's 59th Annual Meeting](#) or [press opportunities at the meeting](#).*

## **ABOUT ASTRO**

*The American Society for Radiation Oncology (ASTRO) is the world's largest radiation oncology society, with more than 10,000 members who are physicians, nurses, biologists, physicists, radiation therapists, dosimetrists and other health care professionals who specialize in treating patients with radiation therapies. The Society is dedicated to improving patient care through professional education and training, support for clinical practice and health policy standards, advancement of science and research, and advocacy. ASTRO publishes three medical journals, International Journal of Radiation Oncology • Biology • Physics ([www.redjournal.org](http://www.redjournal.org)), Practical Radiation Oncology ([www.practicalradonc.org](http://www.practicalradonc.org)) and Advances in Radiation Oncology ([www.advancesradonc.org](http://www.advancesradonc.org)); developed and maintains an extensive patient website, RT Answers ([www.rtanswers.org](http://www.rtanswers.org)); and created the Radiation Oncology Institute ([www.roinstitute.org](http://www.roinstitute.org)), a nonprofit foundation to support research and education efforts around the world that enhance and confirm the critical role of radiation therapy in improving cancer treatment. To learn more about ASTRO, visit [www.astro.org](http://www.astro.org) and follow us on our [blog](#), [Facebook](#) and [Twitter](#).*

**Abstract 22: The Long-Lasting Relationship of Distress on Radiation Oncology Specific Clinical Outcomes**

J. Anderson, P. R. McDonagh, W. Burton, E. C. Fields, and A. N. Slade; *VCU Radiation Oncology, Massey Cancer Center, Richmond, VA*

**Purpose/Objective(s):** The diagnosis and treatment of cancer can have significant mental health ramifications. The NCCN currently recommends using a distress thermometer and problem list survey to serve as a means to quantify patients' distress and communicate specific concerns to providers. The screening tool has been primarily studied in the context of mental health and the mobilization of support to assist patients and their families. Its association with radiation oncology specific clinical outcomes and use as a prognostic tool has remained relatively unexplored.

**Materials/Methods:** With IRB approval, NCCN distress scores were collected on all patients receiving treatment in the Department of Radiation Oncology for initial consultation during a one year period between 2015-2016. Only patients receiving external beam radiotherapy with definitive intent were included in this analysis. Univariate and multivariate analyses were used to evaluate the association of this distress score with several outcomes including inpatient admissions during treatment, missed treatment appointments, duration of time between consultation and treatment, and weight loss during treatment. Distress scores were separated into 4 categories: severe (7-10), moderate (6-4), low (1-3), and none (0).

**Results:** From 2015-2016, 129 new patients completed the NCCN distress thermometer. Of those, 54 patients receiving definitive treatment were included in this analysis. There was a significant association between a severe distress score and both missing at least one appointment and having an admission during treatment. Of patients with severe distress scores, 57% missed at least one appointment compared to 18% of those patients with no, low, or moderate distress ( $p < 0.01$ ). Half of patients with severe distress scores were admitted during treatment, while only 11% of patients with no, low, or moderate distress were admitted ( $p < 0.01$ ). There was no correlation between the distress score and weight loss or having a prolonged time between initial consult and treatment start. The presence of a social work consult was not independently associated with these outcomes.

**Conclusion:** Individuals who reported severe distress scores were more likely to miss appointments during the course of their radiation therapy and more likely to be admitted to the hospital compared to patients reporting lower levels of distress. They were no more likely to experience weight loss or a delay in initiation of treatment after consult. Social work consults on their own were not associated with these clinical outcomes. These data can have implications both in the clinical and social work setting. They can help identify patients early in their treatment course to predict who may be at higher risk for hospital admission and who may have increased barriers to successfully completing their treatment.

**Author Disclosures:** J. Anderson: None. P.R. McDonagh: None. W. Burton: None. E.C. Fields: None. A.N. Slade: None.