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Study at urban cancer center finds 75 percent of its depressed patients were previously undiagnosed

Overall, forty percent of patients were depressed, pointing to a need for mental health screening and care for cancer patients

SAN DIEGO, September 24, 2017 — A new study of patients at an urban cancer center points to a potentially serious problem that may limit the impact of clinical cancer care—undiagnosed depression. Among the 40 percent of patients at the center who were diagnosed with depression, three in four had not previously been told they were depressed. Female patients and disabled patients also were more likely to be depressed, according to research presented today at the [59th Annual Meeting](#) of the American Society for Radiation Oncology (ASTRO).

A web of physiological, psychological and socioeconomic factors associated with having and being treated for cancer—such as severe physical pain, side effects of medication, financial concerns, fears and anxieties about mortality and changes in lifestyle and life plans—place cancer patients at a higher risk of developing depression. The National Cancer Institute (NCI) estimates that [15 to 25 percent](#) of the general cancer patient population has depression—a rate two to three times that of the general population. Approximately [seven percent](#) of U.S. adults experience major depression, according to the National Institutes for Mental Health (NIMH).

“Depression prevalence continues to be high among cancer patients, especially those receiving treatment at an urban cancer center, as well as those who identify as female or are disabled by their disease. Alarming, most of these patients remain undiagnosed and untreated, indicating an important gap in cancer

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care and an opportunity to improve patient outcomes,” said Jason Domogauer, PhD, lead author of the study and an MD/PhD candidate at Rutgers University New Jersey Medical School in Newark, New Jersey.

Findings in this study are based on an examination of 400 cancer patients who received treatment at the University Hospital Cancer Center in Newark, New Jersey, between 2013 and 2016. Researchers assessed depression using a minimum score of 16 on the [Center for Epidemiologic Studies Depression Scale](#).

The average patient age was 55 years (range 20-86 years), and 53 percent of patients were female. The racial/ethnic breakdown of patients was 48 percent African-American, 29 percent non-Hispanic white and 16 percent Hispanic. Nearly equal numbers of patients reported being able to work (including those working full-time, part-time and unemployed) (49%) or being unable to work due to disability (51%). Most patients (85%) received radiation therapy as part of their cancer treatment.

Depression was diagnosed in 40 percent of the patients at this urban cancer center, which is roughly twice as large as the NCI estimate of 15 to 25 percent for the general cancer patient population. Moreover, depression was previously undiagnosed in three-fourths of these cases, meaning that roughly 30 percent of the patients at this cancer center suffered from undiagnosed and untreated depression.

Depression was more common among female patients (47%) than among male patients (32%) (odds ratio [OR] 1.9, $p = 0.007$) and among patients who were unable to work due to disability (48% vs. 33% of those able to work; OR 1.9, $p = 0.005$). NIMH [statistics](#) for the general U.S. adult population also point to a higher risk of depression for women and people with a disability, [particularly among older adults](#). Depression prevalence did not differ significantly among racial/ethnic groups. Logistic regression was used to compare depression prevalence among the patient groups.

Looking specifically at patients who were previously not diagnosed with depression, the effects of being female or unable to work persisted. Among this subgroup, depression was more common among women (43% vs. 29% male; OR 1.9, $p = 0.02$) and disabled patients (43% vs. 31% able to work; OR 1.9, $p = 0.03$).

“Depression is widely recognized as an [underdiagnosed disorder](#), particularly among [older adults](#) and cancer patients. Our findings point to a clear need for action including depression screening during initial and continuing patient visits, initiation of mental health treatments for identified patients and increased collaboration with mental health providers in cancer treatment centers. These efforts are particularly important for patients in urban centers, those who are female and those who are unable to work because of their disease,” said Dr. Domogauer.

The abstract, “Study of total and undiagnosed depression in a cancer patient population at an urban cancer center,” will be presented in detail during a news briefing and an oral abstract session at ASTRO’s 59th

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Annual Meeting in San Diego (full details below). To schedule an interview with Dr. Domogauer 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.

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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 \(Spanish version\)](#)
- Additional [brochures](#), [videos](#) and [information](#) on radiation therapy from RTAnswers.org
- ASTRO's [clinical practice statements and guidelines](#)

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 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), Practical Radiation Oncology (www.practicalradonc.org) and

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Advances in Radiation Oncology (www.advancesradonc.org); developed and maintains an extensive patient website, RT Answers (www.rtanswers.org); and created the Radiation Oncology Institute (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 and follow us on our [blog](#), [Facebook](#) and [Twitter](#).

Abstract 21: Study of Total and Undiagnosed Depression in a Cancer Patient Population at an Urban Cancer Center

J. D. Domogauer, N. Colangelo, and R. Aggarwal; Rutgers University New Jersey Medical School, Newark, NJ

Purpose/Objective(s): This cross-sectional study was performed to better understand the prevalence of diagnosed and undiagnosed depression in an often understudied urban cancer patient population. Additionally, we sought to identify different demographic and socioeconomic factors that may impact an individuals' risk of depression.

Materials/Methods: This study surveyed 400 cancer patients from the Radiation Oncology, Hematology/Oncology, and Chemotherapy Infusion Clinics at the University Hospital Cancer Center in Newark, New Jersey. The survey collected demographic information on age, sex, race, educational level, and income, as well as mental health treatment history and cancer treatment history. Patients were screened for depression using the Center for Epidemiological Studies – Depression Scale, with a score above 16 counted as positive. The data were entered into SPSS Statistical Software package (Version: 24). Logistic regression was performed using SPSS.

Results: The study had a mean age of 55 ± 12 , was 47% male, and had an overall depression prevalence of 40%, 75% of which was not previously diagnosed. The largest racial ethnicity in this study was Black or African-American ($n=170$), followed by Non-Hispanic White ($n=102$), and Hispanic or Latino ($n=57$). The different categories of depression prevalence were similar between the White, Black or African-American, and Hispanic or Latino groups. Across the study, there was a higher depression prevalence among females (47%) than males (32%) (Odds Ratio: 1.9, $p=0.007$). Patients were asked to describe their employment on a basis of four categorical levels, which were divided between those able to work (*i.e.*, full time, part time, unemployed) and those not (*i.e.*, disabled). We observed an increased depression prevalence in the “unable to work” group (Odds Ratio: 1.9, $p=0.005$). Being female or unable to work had a similar effect on depression prevalence in those not previously diagnosed (Odds Ratio 1.9, $p=0.02$; 1.7 $p=0.03$, respectively).

Conclusion: Depression is an important consideration for Radiation Oncologists as 85% of our patient cohort received radiation therapy during their cancer treatment. Our data demonstrates a marked increase in the prevalence of depression in our urban cancer patient cohort (40%) as compared to the general cancer patient population (15-25%). Importantly, of the 40% screening positive for depression, 75% of those were previously undiagnosed, indicating an important modifiable risk factor for decreased quality of life in these patients. Further, we found a significantly increased risk of depression in female patients, and in those who are unable to work due to disability. Together, our findings support an increased need to screen cancer patients for depression, especially those who are female-identifying and disabled, in order to improve patients' quality of life and outcomes.

Author Disclosures: J.D. Domogauer: None. N. Colangelo: None. R. Aggarwal: None.