

# Assessing Discrepancies in Neurocognitive and Patient-Reported Measures of Brain Tumor Survivors

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**OBJECTIVES:** To examine the association between performance-based neurocognitive and patient-reported cognitive function tests and identify characteristics that may explain observed discrepancies as a means to advance intervention development.

**SAMPLE & SETTING:** 40 adults diagnosed with a primary brain tumor (PBT) (high-grade,  $n = 35$ ) were recruited from two academic neuro-oncology clinics in North Carolina.

**METHODS & VARIABLES:** Eligibility included a Mini-Mental State Examination score of 24 or greater, having completed cancer treatment, and having tumor stability. Participants completed performance-based neurocognitive and patient-reported cognitive function, demographic, and symptom assessment tests at one time point.

**RESULTS:** Neurocognitive impairments included executive control, memory, and attention. Age, time since diagnosis, and tumor- or treatment-specific variables were not associated with neurocognitive or patient-reported cognitive function. Those reporting worse cognitive impairment tended also to report greater severity of PBT-specific and depressive symptoms.

**IMPLICATIONS FOR NURSING:** Patient-reported cognitive concerns warrant additional assessment for potential interventions to maintain function.

**KEYWORDS** primary brain tumor; adult patients with cancer; neurocognitive performance; survivors

**ONF, 47(1), E1-E12.**

**DOI** 10.1188/20.ONF.E1-E12

Adults diagnosed with a primary brain tumor (PBT) have benefited from advancements in cancer treatment with improved survival rates (Ostrom et al., 2018). As a result, survivors have an opportunity to voice their concerns about the impact of cancer and its treatment. Clinicians have been called on to assess and intervene as a means to improve their patients' quality of life. Because cognitive concerns are reported to be very distressing to cancer survivors (Allen & Loughan, 2018), they warrant exploration for development of cognitive interventions.

Performance-based neurocognitive impairment in survivors of adult PBT has been estimated to be as low as 32% for global impairment that occurs across many cognitive domains or as high as 93% for test-specific impairment (Dwan, Ownsworth, Chambers, Walker, & Shum, 2015). Tumor grade, location, and treatment have influenced these results (Dwan et al., 2015). Domains of cognitive function most commonly affected are of memory and executive control function (Dwan et al., 2015). The resulting deficits are recognized as a cause of disability, including the inability to return to work or participate in social activities, and pose long-term changes in daily lives (Allen & Loughan, 2018).

Self-reported cognitive complaints are often the first indicator of change in function or well-being (Ganz et al., 2013; Pranckeviciene, Deltuva, Tamasauskas, & Bunevicius, 2017). Although cognitive complaints have been more commonly reported during treatment or shortly after treatment completion (Savard & Ganz, 2016), Hendrix et al. (2017) found that patients newly diagnosed with brain tumors reported having problems with memory and language skills. Patient-reported cognitive concerns have been associated with shorter survival, worse functional status, and tumor progression (Pranckeviciene et al., 2017).