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Assessment of Cancer-related Cognitive Impairment: Methodological Issues

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Cognitive decline associated with cancer or its treatment has been addressed in many studies, though with inconsistent findings, which largely reflects the diversity of methods that have been used. In this context, we read with much interest the paper recently published in the Archives of Clinical Neuropsychology (Clapp et al., 2018) about the impact of using different reference populations on breast cancer-related cognitive impairment rates, which was based on a thorough assessment of a large number of cancer patients and non-cancer subjects.

We agree with the authors that it was reassuring to obtain similar frequencies of cognitive impairment regardless of whether published normative data or study-specific control reference values were used to define impairment. However, these results are not surprising, since small differences could be anticipated if the study controls were similar to the cancer patients regarding characteristics known to be associated with cognitive impairment. More importantly, the definition of impairment based on deviation from mean scores does not necessarily result in the identification of cases with the same clinical relevance regardless of the reference; therefore, the use of cut-offs obtained from study-specific populations may further increase the clinical heterogeneity of the cases identified in different investigations, hampering direct comparisons between studies. In our view, a bigger concern is how to control for the effects of anxiety in cognitive test scores in women with breast cancer, particularly in the early diagnosis and treatment stages, as it can affect the interpretation of results (Ramalho, Fontes, Ruano, Pereira, & Lunet, 2017).

We also recognize the importance of conducting studies based on the assessment of prospective change in cognitive status. This, however, brings additional methodological challenges, since comprehensive neuropsychological batteries are too resource demanding for periodic testing of large groups of individuals, and the brief cognitive screening tools are limited in their ability to identify mild cognitive impairment. Furthermore, most tasks included in both comprehensive batteries and screening tests were not specifically designed to minimize the practice effects of repeated testing. The development of new tools for computerized cognitive testing is a promising strategy to overcome these limitations (Ruano et al., 2016).

In conclusion, despite the potential contribution of using different reference populations for the heterogeneity of results across studies, in our opinion there are bigger issues that remain to be addressed towards better evaluation standards, including reproducible and clinically relevant criteria for classification of prevalent and incident cognitive impairment in breast cancer.

Conflict of interest

None declared.

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