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The association between perioperative frailty and ability to complete a web-based geriatric assessment in older adults with cancer.

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Background: With expansion of web-based geriatric assessment (GA), the aim of our study is to assess whether patients' independency and time to complete electronic Rapid Fitness Assessment (eRFA), a web-based GA at our institution, is associated with frailty. **Methods:** Retrospective study of 3456 patients with cancer who underwent cancer surgery in 2015-2020 with hospital length of stay of 1+ days and completed the eRFA prior to surgery. Frailty was assessed by two methods: Memorial Sloan Kettering Frailty Index (MSK-FI, score 0-11) and accumulative geriatric deficits (AGD, score 0-13). In both measures, higher score is reflective of higher degree of frailty. Patient's independency to complete the eRFA was self-reported (no help, some help, someone else). Time to complete the eRFA was captured by the system based on survey start time and submission time. Association between characteristics and patient's independency to complete the eRFA were assessed using Kruskal Wallis test for continuous variable and Chi-square test for categorical variables. Analysis into time to complete the eRFA excluded surveys completed by someone else (n = 407), those completed in < 2 min (n = 1) or > 40 min (n = 82). Association between time to complete the eRFA and frailty was assessed using two separate linear regression models with frailty—MSK-FI and AGD, separately—as the outcome, and minutes to complete the eRFA as the predictor, in surveys completed with no help and some help, separately. Time to complete the eRFA was included in the model as a non-linear term with restricted cubic splines with knots at the tertiles. **Results:** Among our cohort, the median age at the time of survey completion was 78 (quartiles 75, 82), just under half (49%) of patients were male. Survey completion corresponded to 58% with no help, 30% with some help, and 12% by someone else. Independency in completing the eRFA was associated with younger age (median ages: no help 77, some help 80, someone else 80), and lower frailty (median AGD: no help 4, some help 6, someone else 8; median MSK-FI: no help 2, some help 3, someone else 3) (all $p < 0.001$). Longer time to complete the eRFA was associated with higher degree of frailty measured by MSK-FI and AGD (all non-linear association $p < 0.001$). For example, for surveys completed with no help in 5, 10, and 15 minutes, the estimated MSK-FI is 1.4 (95% CI 1.3, 1.6); 2.3 (95% CI 2.2, 2.4); and 2.3 (95% CI 2.1, 2.6), and the estimated AGD is 3.1 (95% CI 2.9, 3.3); 5.1 (95% CI 4.9, 5.4), and 5.1 (95% CI 4.7, 5.5). **Conclusions:** Patients who needed assistance or took a longer time to complete the assessment were more likely to have a higher degree of frailty. To avoid burdening the hospital, placing undue stress on patients, and possibly inaccurate responses, we should test solutions that may enhance the ability of frail patients to complete the eRFA faster and without assistance from others, such as by using voice assistants. Research Sponsor: The project was supported, in part, by the Beatriz and Samuel Seaver Foundation, the Memorial Sloan Kettering Cancer and Aging Program, the NIH/NCI Cancer Center Support Grant P30 CA008748, and the National Science Foundation Grant No. 1700832. The manufa.