THE IMPACT OF ADMINISTRATION MODES ON PATIENT-REPORTED OUTCOME SURVEY: A REPORT FROM THE CHILDHOOD CANCER SURVIVOR STUDY (CCSS)

I-Chan Huang, PhD,1,* Geehong Hyun, PhD,1 Todd M. Gibson, PhD,1 Yutaka Yasui, PhD,1 Wendy Leisenring, ScD,2 Gregory T. Armstrong, MD, MSCE,1 Melissa M. Hudson, MD,1,3 Leslie L. Robison, PhD,1 Kevin R. Krull, PhD.1,4

Departments of (1) Epidemiology and Cancer Control, (3) Oncology, and (4) Psychology, St. Jude Children’s Research Hospital, Memphis, TN.; (2) Clinical Research Division, Fred Hutchinson Cancer Research Center, Seattle, WA.

* Corresponding author: I-Chan Huang, PhD
Address: Mail Stop #735, 626 Danny Thomas Place, Department of Epidemiology and Cancer Control, St. Jude Children’s Research Hospital, Memphis, TN
Telephone: (901) 595-8369
E-mail: i-chan.huang@stjude.org

Type of presentation preference: Oral (primary) and poster (secondary)

Purpose:
The impact of survey administration by postal mail, telephone interview and web-based modes on survey completion and measurement properties in cancer survivor-based research is unknown.

Methods:
This study included 7,064 survivors from the CCSS expansion cohort who engaged in the baseline survey and completed the Brief Symptom Inventory-18 (BSI-18). The impact of survey administration was evaluated in three domains (anxiety, depression, and somatization). We evaluated survey completion as the percentage of survivors who completed every BSI-18 item. Measurement properties of the BSI-18 were examined within each mode using Cronbach’s alpha coefficients (internal consistency), confirmatory factor analysis (CFA, dimensionality), and measurement non-invariance methodology (whether survivors using different modes answered the response category of an item differently given the same level of BSI-18 domain). Multiple Indicators & Multiple Causes models were employed to test measurement non-invariance.

Results:
4,068 (58%), 1,014 (15%), and 1,892 (27%) survivors chose mail, telephone, and web-based modes to complete the surveys, respectively. Compared to mailed-surveys, responders who chose the telephone mode were more likely to have been male, black/Hispanic, less educated, single/widowed/divorced, uninsured, brain tumor survivors, treated with radiotherapy, and have poorer self-reported health status (p’s<0.001); web-based survey responders were more likely to have higher income and report better health status (p’s<0.001). Mailed surveys produced slightly more missing data on each BSI-18 item than did telephone and web-based surveys (1.3% vs. <0.5%; p’s<0.001). Telephone surveys had slightly lower internal consistency (0.70-0.88) than mailed and web-based surveys (0.75-0.91). CFA revealed equivalent dimensionality of the BSI-18 across the three modes. Telephone surveys resulted in more items with measurement non-invariance than did web-based surveys (7 vs. 1 items); however, non-invariance did not distort domain score calculation.
Conclusions:
Characteristics of CCSS survivors influenced the selection of survey modes, but measurement properties of the BSI-18 were not affected by administering different modes.