Sensory Perceptions of Cancer Survivors and their Caregivers of Garden-Harvested and Grocery-Purchased Produce

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BACKGROUND

The Ohio State University

Participants for this exploratory study were recruited from a group of survivors enrolled in an existing garden-based biobehavioral intervention. Participating survivors and their caregivers were invited to enroll in this study. Approximately three hours prior to the start of the study, produce was harvested from the study garden and purchased from a local retail grocery store. Four types of produce were included: tangerine cherry tomatoes, green cabbage, green beans, and green bell peppers. Both garden-harvested and grocery-purchased produce were cut into similarly sized and shaped pieces, placed into sealed plastic cups, and labeled with randomized sample numbers for coding and blinding. Each participant received four individual trays served one at a time (Figure 1). Each tray contained six samples divided among two sections presented side-by-side; section one contained two blinded produce samples for the initial preference and the initial liking/acceptability tests, while tray section two had four blinded samples for the Tetrad Test. Throughout the testing session, all samples were assessed for sensory qualities (Figure 2). Preference and Tetrad Test data were analyzed using binomial statistics, while data from liking/acceptability scores were analyzed using Wilcoxon signed rank test given non-normality of data. Significance was set at 0.05.

METHODS

Participants for this exploratory study were recruited from a group of survivors enrolled in an existing garden-based biobehavioral intervention. Participating survivors and their caregivers were invited to enroll in this study. Approximately three hours prior to the start of the study, produce was harvested from the study garden and purchased from a local retail grocery store. Four types of produce were included: tangerine cherry tomatoes, green cabbage, green beans, and green bell peppers. Both garden-harvested and grocery-purchased produce were cut into similarly sized and shaped pieces, placed into sealed plastic cups, and labeled with randomized sample numbers for coding and blinding. Each participant received four individual trays served one at a time (Figure 1). Each tray contained six samples divided among two sections presented side-by-side; section one contained two blinded produce samples for the initial preference and the initial liking/acceptability tests, while tray section two had four blinded samples for the Tetrad Test. Throughout the testing session, all samples were assessed for sensory qualities (Figure 2). Preference and Tetrad Test data were analyzed using binomial statistics, while data from liking/acceptability scores were analyzed using Wilcoxon signed rank test given non-normality of data. Significance was set at 0.05.

RESULTS

Cancer survivors were primarily Caucasian, female breast cancer survivors. When rating initial preference, with the exception of tomatoes, the blinded grocery-purchased produce was more commonly labeled as the preferred samples (Figure 3). Similarly, liking/acceptability scores were often higher for grocery-purchased produce (Figure 4). During the Tetrad Test, a significant number of participants were able to group the tomatoes, green beans, and bell peppers, though most incorrectly labeled the bell peppers and green beans (i.e., guessed the garden-harvested produce was actually the grocery-purchased).

CONCLUSION

Inaccuracies exist in produce perceptions among cancer survivors and caregivers. These may exist due to the bitter taste of some phytochemicals, while cancer survivors may have different preferences secondary to treatment side effects. Interventions targeting produce consumption should aim to address such factors.

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