

Poster P3-03-06: A pilot study of personal care product use and exposure to environmental chemicals among Black and Hispanic breast cancer survivors

BACKGROUND

- Racial and ethnic minorities are disproportionately exposed to environmental chemicals that have been linked to cardiovascular disease, cognitive decline, metabolic disease, and premature mortality.
- Recent evidence suggests that personal care products are a source of such exposures and that these products are more frequently used among Black and Hispanic women.
- Few studies have examined personal care product use and environmental exposures among minority cancer survivors, who tend to experience worse breast cancer outcomes compared to White patients.

OBJECTIVE

To describe personal care product use and chemical exposures, including ambient and dermal sources of exposure, in a pilot study of Black and Hispanic breast cancer survivors.

METHODS

Recruitment

- November 2020 – December 2021
- Community-based recruitment in Washington, DC and clinic-based recruitment in Hackensack, NJ

Eligibility criteria

- Self-identified as Black and/or Hispanic
- Aged ≥21 years
- Diagnosed with primary Stage I-III breast cancer
- Completed breast cancer treatment except endocrine therapy
- Able to read and speak English
- Willing to attend 2 study visits

Data collection and analysis

- Surveys: demographics, breast cancer diagnosis, personal care product use, and potential covariates
- Passive sampling: silicone wristbands worn for 1 week
 - Extracts were assessed using a gas chromatograph-mass spectrometer to detect chemical exposures
- Values were adjusted for wear time and wristband size to provide sample concentrations

Table 1. Sociodemographic and clinical characteristics of pilot study participants (N = 25 Black and Hispanic breast cancer survivors)

Participant characteristics	N (%) or Mean ± Std. Dev.
Sociodemographic characteristics	
Age, years	57.76 ± 9.12
Self-identified as Black	
Yes	17 (68.0)
No	8 (32.0)
Self-identified as Hispanic/Latina	
Yes	8 (32.0)
No	17 (68.0)
Marital status	
Single, never married	10 (40.0)
Married	11 (44.0)
Divorced/widowed	4 (16.0)
Education	
High school diploma or equivalent	4 (16.0)
Associate Degree/Some college	5 (20.0)
Bachelor's Degree	8 (32.0)
Master's Degree or higher	8 (32.0)
Household income	
<\$35,000	4 (16.0)
\$35,000-\$49,999	4 (16.0)
\$50,000-\$74,999	2 (8.0)
≥\$75,000	13 (52.0)
Don't know/Refused	2 (8.0)
Currently employed	
Yes	16 (64.0)
No	7 (28.0)
On disability/Temporary furlough	2 (8.0)
Site	
Georgetown LCCC	13 (52.0)
Hackensack UMC	12 (48.0)
Clinical characteristics	
Breast cancer stage	
Stage 1	14 (56.0)
Stage 2	7 (28.0)
Stage 3	4 (16.0)
Surgery	
Yes	25 (100.0)
No	0 (0.0)
Radiation	
Yes	17 (68.0)
No	8 (32.0)
Chemotherapy	
Yes	16 (64.0)
No	9 (36.0)
Hormone therapy	
Yes	11 (44.0)
No	14 (56.0)
Years since last treatment	4.44 ± 3.95

RESULTS

Figure 1. Frequency of personal care product use among 25 Black and Hispanic breast cancer survivors

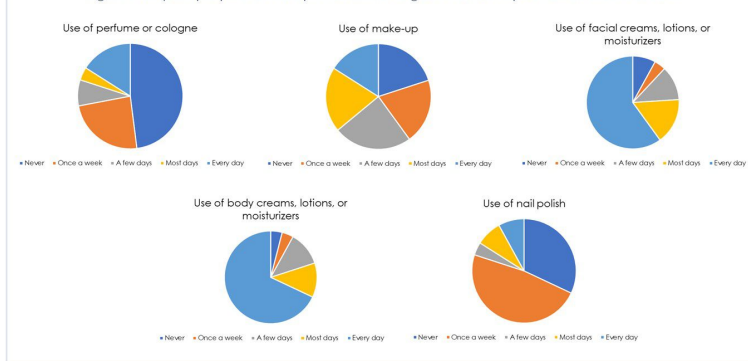


Figure 2. Frequency of dietary consumer product use among 25 Black and Hispanic breast cancer survivors

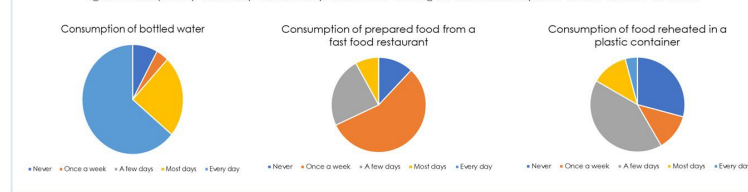
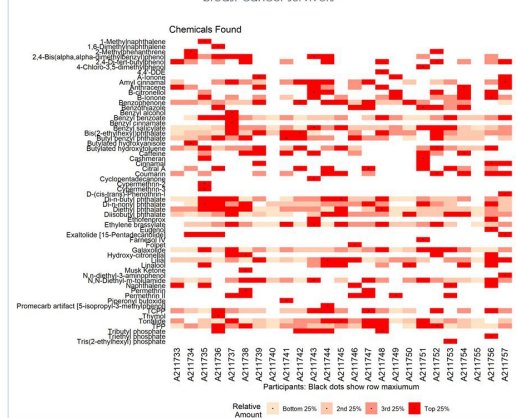


Figure 3. Relative distribution of the detected chemicals among 25 Black and Hispanic breast cancer survivors



CONCLUSIONS

- Exposure to environmental chemicals was ubiquitous among Black and Hispanic breast cancer survivors in DC and New Jersey.
- Several of the most commonly detected chemicals, including benzyl salicylate (a UV light absorber and fragrance), diisobutyl phthalate (a plasticizer), and lilial (a perfume), are biologically active compounds with potential genotoxic or endocrine effects.
- Frequent use of personal care products and commercial products suggest an opportunity to reduce potentially harmful exposures.
- Future studies are needed to investigate the role of environmental chemicals in health outcomes among breast cancer survivors and whether environmental exposures contribute to cancer health disparities.