Hygiene products associated with presence of chemicals in women's blood

October 17 2019, by Nardy Baeza Bickel

Use of feminine hygiene products in the past month

	All	White (non-Hispanic)	Black (non-Hispanic)	Mexican American	Other Hispanic	Other Ethnicity
Tampon	851	53	36	25	29	33
Sanitary Napkin	1320	56	37	67	63	54
Vaginal Douche	408	13	39	13	14	9
Feminine Spray	146	4	16	3	11	4
Feminine Powder	93	2	11	1	4	3
Wipes/ Towelettes	251	8	18	11	16	6
Total Participants	2432	1166	511	547	107	101

Credit: University of Michigan

Women who use a vaginal douche could be at a higher risk of exposure to potentially dangerous chemicals, according to a University of Michigan study that looked at the correlation between the use of female hygiene products and the levels of volatile organic compounds in women's blood.

The study found a significant association between vaginal douching and higher blood concentrations of 1,4-dichlorobenzene, a volatile organic compound. Because black women in the study reported significantly more use of vaginal douching, researchers believe they could be at higher risk of exposure to the chemicals and their negative effects.

According to the study, women who used a vaginal douche two or more times per month had concentrations 81 percent higher than those that never used. Women who used douches occasionally (once a month) had 18 percent higher concentrations of the chemical.

VOCs are chemicals that are used in a wide-range of products including deodorants, nail polish and paints. Some of these chemicals have been associated with respiratory symptoms, cancers and neurological disorders, as well as adverse effects in reproductive systems.

While additional studies are needed, women would be better off heeding the recommendation from the American Society for Obstetricians and Gynecologist not to use certain products, said Ning Ding, a doctoral candidate in epidemiology at U-M's School of Public Health and lead author of the study.

"While they are more concerned about disrupting the balance of bacteria

in the genital area or interrupt the pH level, they have not focused on the toxicity of those endocrine disrupting chemicals, which is really important and need to be highlighted," said Ding, pointing out that 20-40 percent of women use this kind of product in the U.S. "I would recommend women not to douche."

The study, published online in the *Journal of Women's Health*, uses data from a representative sample of 2,432 women aged 20-49 from the National Health and Nutrition Examination Survey 2001-2004. Participants were asked about their use of feminine products including tampons, sanitary napkins (pads), vaginal douches, sprays, powders and wipes/towelettes.

Researchers used regression models to estimate percentage changes in concentration of VOCs in blood to establish whether a dose-response relationship existed. Among the chemicals analyzed were eight VOCs: bromoform, bromodichloromethane, benzene, chloroform, dibromochloromethane, 1,4-dichlorobenzene (DCB) and ethylbenzene.

In addition to the relationship between douching and DCB levels, researchers found that the use of feminine powder in the past month was significantly associated with higher concentrations of ethylbenzene.

Researchers said they are conducting a follow-up study looking at more than 100 feminine hygiene products used by women and are following 30 women through a menstruation cycle to determine if there is a correlation between the use of the products and levels of VOCs in their urine.

More information: Ning Ding et al. Exposure to Volatile Organic Compounds and Use of Feminine Hygiene Products Among Reproductive-Aged Women in the United States, *Journal of Women's Health* (2019). DOI: 10.1089/jwh.2019.7785

Provided by University of Michigan