FEMININE HYGIENE PRODUCT USE
AND THE RISK OF OVARIAN CANCER

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Disclosure

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DEDICATION

- This work is done in memory of my daughter.

Anna
1980-2009
Ovarian Cancer - Background

- Historically known as the “silent killer”
  - Insidious onset
  - Late diagnosis, poor prognosis
  - No population screening test that is reliable and cost effective for low-risk women
  - Most lethal of the gynecologic cancers

- Now a new mantra
  - Ovarian cancer whispers – LISTEN!
Ovarian Cancer - Background

- In 2015
  - 23,000+ women in the US learned they had ovarian cancer and approximately 15,000 women died from the disease
  - It is conservatively estimated that worldwide 150,000 women die each year
  - Incidence and mortality rates have not changed significantly in the last 40 years
OVARIAN CANCER - BACKGROUND

- Known family history and warning signs of ovarian cancer
  - Abdominal bloating, increase in abdominal girth (with or without weight change)
  - Pelvic or abdominal pain
  - Difficulty eating or feeling full quickly
  - Urinary symptoms such as urgency or frequency

- Protective Factors
  - Pregnancy and breastfeeding
  - Oral contraceptive pill use, NSAID use
  - Hysterectomy, bilateral tubal ligation, prophylactic salpingo-oophorectomy
Ovarian Cancer - Background

Risk Factors

- Increasing age (over 50)
- Chronic inflammation
- Nulliparity
- Hormone replacement therapy
- Infertility treatment (ovarian hyperstimulation)
- Smoking and obesity
- Positive for BRCA 1 or BRCA 2
- Ashkenazi Jewish decent
- Lynch Syndrome, Endometriosis, other cancers
- Lesbian population
Ovarian Cancer - Background

- Ovarian cancer
  - multifaceted disease
  - expression dependent upon accumulated risk factors
  - until population screening is available, women need to be aware of hereditary and lifestyle characteristics that increase predisposition to ovarian cancer
  - recent litigation against Johnson & Johnson in the US has raised the question about the association between ovarian cancer and the use of body powder in the perineal area.
Research Question

- Is the use of feminine hygiene products associated with increased odds of developing ovarian cancer?

- This question was derived from a larger overarching study to elicit data from women who have been diagnosed with ovarian cancer, as well as women who do not have the disease, to determine if there is clustering of ovarian cancer risk factors associated with the use of genital talc, tampons, and douching.
**Methods**

- Non-experimental, cross-sectional, online survey
- Targeted women over the age of 18 who have internet access and the ability to read English
- Recruited from public access, online ovarian cancer support groups and other women’s health web sites. Snowball sampling was also used
- Participants placed in one of three groups – ovarian cancer, other cancer, no cancer
METHODS

- The 130 item, researcher developed instrument was pilot-tested with 30 women prior to being posted online via PsychData with the statement that completion of the online survey implied consent to participate.

- A priori power analysis determined minimum sample size to be 962-1185 participants for the desired level of power of .90 to .95, an \( \alpha \)-level at .05, and a moderate effect size for the multiple logistic regression model using ROC curve analysis that will ultimately be used.
**Sample**

- 1,274 women completed the 25-minute online survey (553 women with ovarian cancer, 91 women diagnosed with other type of cancer, and 630 women who had never received a cancer diagnosis)

- 1185 women between the ages of 18 and 86 were included in the analysis ($M = 50.98$, $SD = 13.66$)

- The majority of the sample identified as Caucasian (80%); however, other groups were represented including Black (4.6%), Hispanic (5.1%), Asian (2.7%), with remaining participants identifying as an ethnicity other than these

- Over 90% of the sample indicated having at least “some college” or more education

- Over half the sample (51.5%) described their SES as “Middle/Average”
RESULTS

- Crosstabulations with Pearson’s Chi Square and Logistic Regressions were used to examine the association between feminine hygiene use and having ovarian cancer.
- Among women who reported using douches, a greater proportion had ovarian cancer (33.1%) compared to those who did not (22.4%).
- Among women who reported using talcum powder on their genital area, a greater proportion indicated having ovarian cancer (54.4%) compared to those who did not (39.9%).
- Frequency of tampon use was not associated with ovarian cancer.
- Douching was significantly associated with increased odds of having ovarian cancer (Odds Ratio = 1.34).
- Genital talcum use was also associated with increased likelihood of having ovarian cancer (Odds Ratio = 1.76).
RESULTS

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>S.E.</th>
<th>WALD CHI-SQUARE</th>
<th>ODDS RATIO</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tampon Use (Frequency)</td>
<td>-.040</td>
<td>.047</td>
<td>.721</td>
<td>.961</td>
<td>.396</td>
<td>.877 - 1.053</td>
</tr>
<tr>
<td>Douche Use</td>
<td>.292</td>
<td>.142</td>
<td>4.208</td>
<td>1.339</td>
<td>.040</td>
<td>1.013 - 1.770</td>
</tr>
<tr>
<td>Genital Talc Use</td>
<td>.566</td>
<td>.126</td>
<td>20.035</td>
<td>1.761</td>
<td>.000</td>
<td>1.375 - 2.257</td>
</tr>
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Note. Model summary: $\chi^2 (3)$, $p < .001$, Nagelkerke $R^2 = .036$
Use of body powder on the genital area and douching are associated with an increased incidence of ovarian cancer – possibly due to an inflammatory process.

There was no association between tampon use and ovarian cancer – no detached or ascending particulate matter.

DNA (TP53) extracted from tampons has been detected in 60% of women with ovarian cancer – a possible new approach to early detection (Erickson, et al, 2014)
Nursing Implications

- Become familiar with the risk factors, protective factors, and early warning signs of ovarian cancer.

- Inform women, especially those at highest risk, that some feminine hygiene products may contribute to the development of ovarian cancer.

- Increased understanding of the relationships between genetic, biological, behavioral, developmental, and environmental factors is a first step in earlier detection of pathology when treatment is most effective.
Key References


THANK YOU