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PELVIC FLOOR MUSCLE AND SEXUAL FUNCTION IN ENDOMETRIAL CANCER SURVIVORS SUFFERING FROM DYSPAREUNIA

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With the collaboration of
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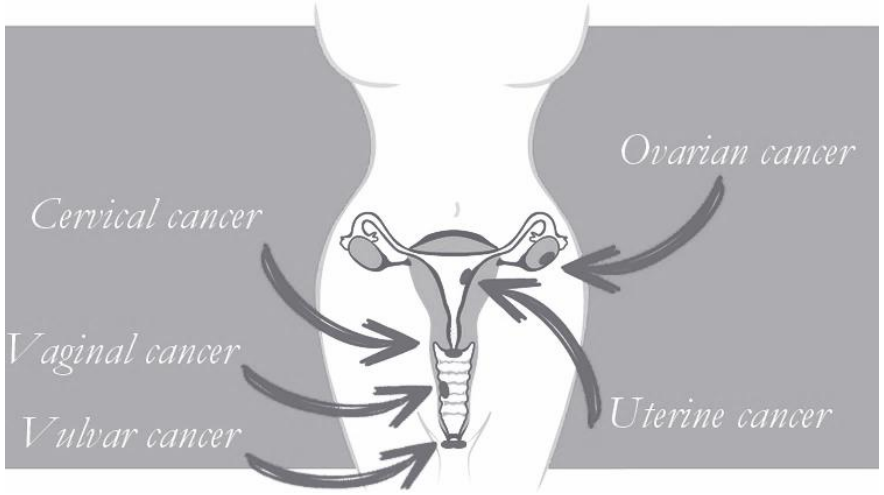
BACKGROUND

Gynecological cancers

- Prevalence: >½ female cancers[1-3]
- Incidence in the Canadian population: 11 200[4]
  - **Body of the uterus (endometrial cancer): 6 300**
  - Ovary: 2 800
  - Cervix: 1 500
  - Vulva and vagina: 614



Growing number of gynecological cancer survivors[1,3-4]

1. Canadian Cancer Society's Advisory Committee on Cancer Statistics (CCSACCS) (2015),
2. Howlader et al. (2017), 3. Sancho-Garnier (2013), 4. Statistics Canada (2015)

BACKGROUND

Pelvic floor dysfunction

- Urinary incontinence: 70 %[1]
  (25-45 %)[2]
- Gynecological pain (dyspareunia): 63 %[1]
  (6.4-13 %)[3-5]
- Sexual dysfunction: 61 %[1]

→

- Sexual dysfunctions
- Psychological distress (depression, anxiety)
- Marital difficulties
- Quality of life ↓[6-11]

Higher prevalence than
women with no history of gynecological cancer of the same age

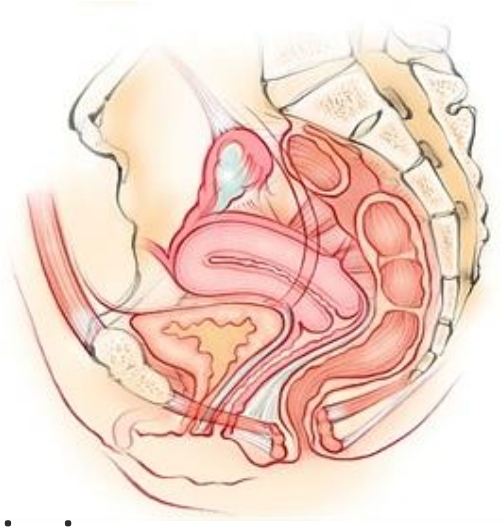
1. Rutledge et al. (2010), 2. Milsom et al. (2013), 3. Laumann et al. (1999), 4. Mitchell et al. (2017), 5. Reed et al. (2012)

6. Abbott-Anderson and Kwekkeboom (2012), 6. Audette and Waterman (2010), 8. Dizon et al. (2014), 9. Gilbert et al. (2011), 10. Izycki et al. (2016), 11. Stabile et al. (2015)

BACKGROUND

Dyspareunia in gynecological cancer survivors

- Suggested to be related to oncological treatments[1-2]
  - Vaginal dryness
  - Loss of vaginal tissue elasticity
  - Narrowing and shortening of the vagina
  - Pelvic floor muscle (PFM) tension



Dyspareunia and PFM dysfunction?

- No study investigated PFM function in relation to dyspareunia in gynecological cancer survivors
- PFM dysfunction associated with dyspareunia in women with no history of cancer[3-5]

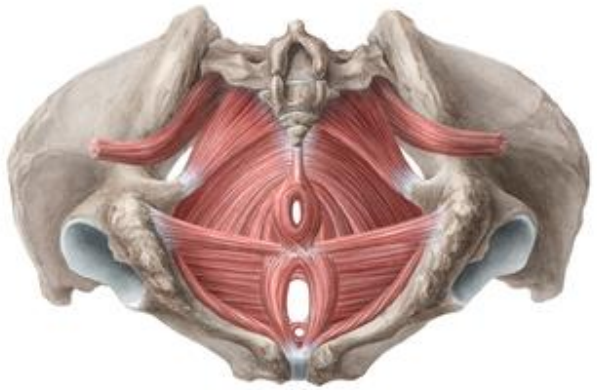
1. Stinesen Kollberg et al. (2015), 2. Gilbert et al. (2011), 3. Gentilcore-Saulnier et al. (2010),
4. Morin et al. (2017), 5. Reissing et al. (2005)

OBJECTIVES

To explore differences in:

1. **PFM function**
2. **Sexual function**

Between endometrial cancer survivors with dyspareunia and women without pain who underwent a total hysterectomy for benign conditions



METHODS

Design

- Exploratory, bicentric comparative study
  - Bicentric: Sherbrooke and Montreal
- Institutional Review Board approval obtained

Centre intégré universitaire de santé et de services sociaux de l'Estrie – Centre hospitalier universitaire de Sherbrooke
Québec

CENTRE DE RECHERCHE | CHUS Centre hospitalier universitaire de Sherbrooke

Centre intégré universitaire de santé et de services sociaux du Centre-Est-de-l'Île-de-Montréal
Québec

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Institut universitaire de gériatrie de Montréal

Centre intégré universitaire de santé et de services sociaux de l'Ouest-de-l'Île-de-Montréal
Québec

Hôpital général juif

METHODS

Participants

- **Eligibility criteria – Endometrial cancer survivors**

Inclusion	Exclusion
• **Scheduled oncological treatments completed** with no signs of cancer for ≥3 months • **Vulvovaginal pain ≥5/10** in at least **80 %** of sexual intercourse for **≥3 months**[1-2] • **Standardized gynecological examination** by a gynecologic oncologist (to exclude other causes of dyspareunia)[3]	• Vulvovaginal pain before cancer and not related to sexual intercourse • Medication recognized to affect pain • Other conditions interfering with assessment[4-7]

1. Dworkin et al. (2005), 2. Treede et al. (2015),
3. Heim (2001)

4. Haylen et al. 2016, 5. Lindberg et al. (2011),
6. Morin et al. (2016), 7. Steege et Zolnoun (2009)

METHODS

Participants

- **Eligibility criteria – Asymptomatic women**

Inclusion	Exclusion
• **Total hysterectomy for benign conditions** for **≥3 months** • **Sexually active**	• History of gynecological cancer • Gynecological pain • Other conditions interfering with assessment[5-8]

- The two groups were balanced in terms of age, body mass index and number of vaginal deliveries[1-4]

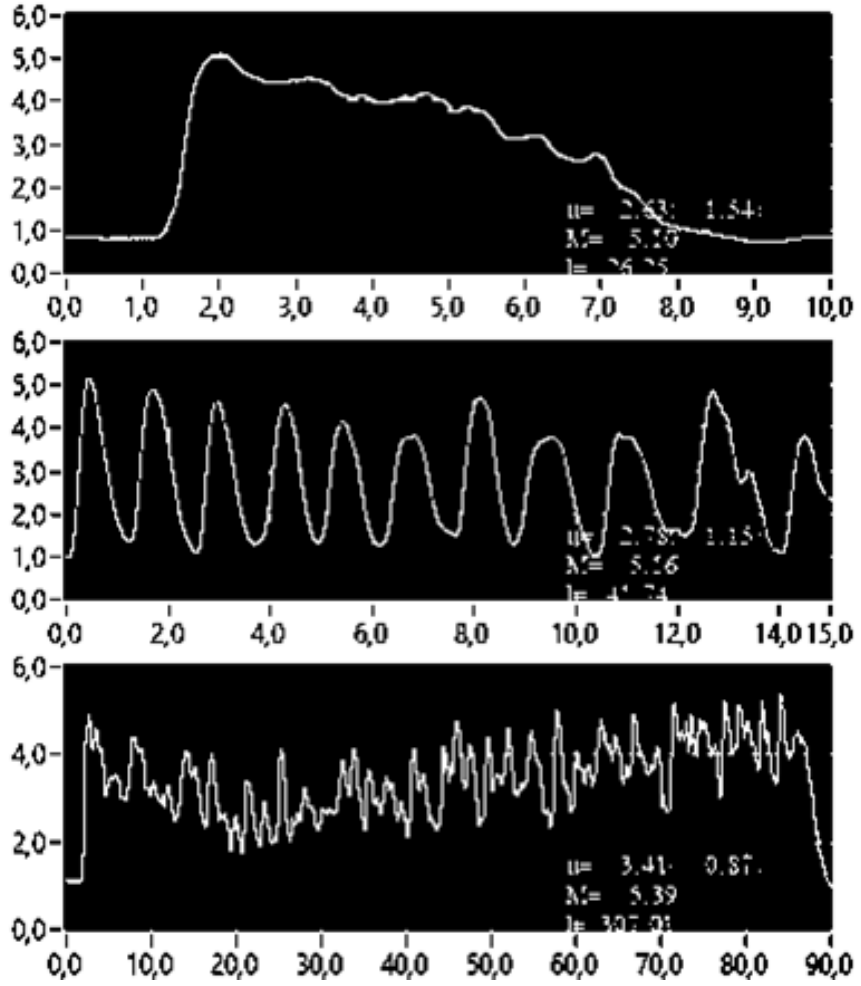
1. Braekken et al. (2009),
2. Ramalingam et Monga (2015),
3. Slieker-ten Hove et al. (2010), 4. Stuge et al. (2012)
5. Haylen et al. 2016, 6. Lindberg et al. (2011),
7. Morin et al. (2016), 8. Steege et Zolnoun (2009)

METHODS

Procedures

1. **PFM function:** Dynamometric speculum[1-5]

Parameters
Tone at minimal vaginal aperture (N)
Tone at maximal vaginal aperture (N)
Maximal vaginal aperture (mm)
Strength (N)
Speed of contraction (N/s)
Coordination (number of rapid contractions)
Endurance (50 s) (%*s)

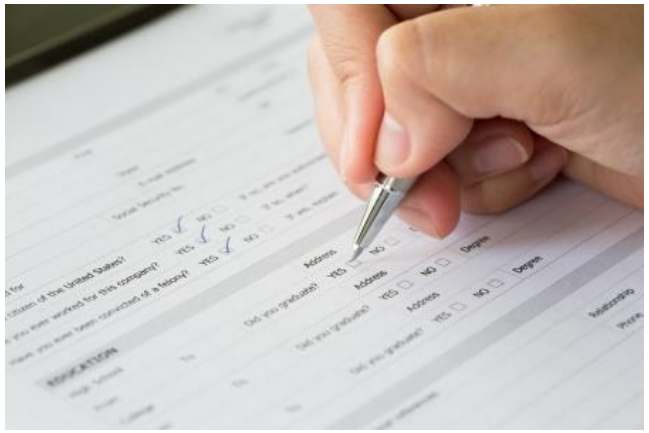


1. Morin et al. (2004), 2. Dumoulin et al. (2004), 3. Morin et al. (2007), 4. Morin et al. (2008),
5. Morin et al. (2017)

Procedures

2. Sexual function: Female Sexual Function Index[1-6]

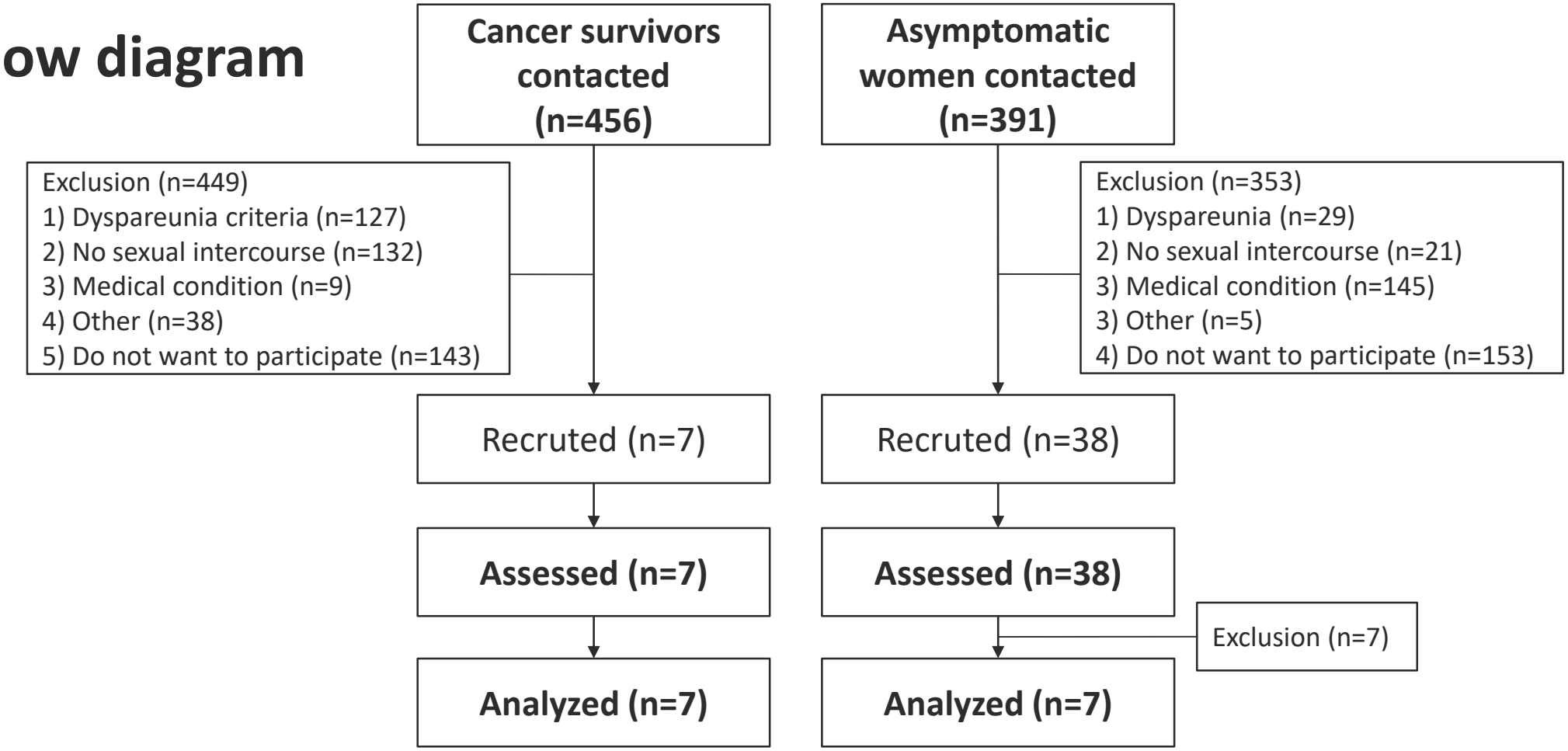
Parameters
Total score /36 – Sexual function



1. Rosen et al. (2000), 2. Meyer-Bahlburg et Dolezal (2007), 3. Meston (2003), 4. Meston et Derogatis (2002), 5. Wiegel et al. (2005), 6. Wylomanski et al. (2014)

RESULTS – DISCUSSION

Flow diagram



Participants – Endometrial cancer survivors

Parameters	n (%)
Stage of the cancer	
• 1	4 (57)
• 2	1 (14)
• 3	2 (29)
Oncological treatments	
• Surgery	4 (57)
• Surgery + brachytherapy	1 (14)
• Surgery + brachytherapy + external radiation therapy + chemotherapy	2 (29)

RESULTS – DISCUSSION

Participants

Characteristics	Survivors Median (IQR)	Asymptomatic Median (IQR)	p value
Age (years)	57.0 (54.0-70.0)	58.0 (55.0-61.0)	0.898
Body image index (kg/m^2)	29.72 (25.53-31.94)	26.13 (24.71-28.13)	0.338
Use of hormonotherapy	0 (0)	4 (57)	0,070
Surgery			
• Laparoscopy	4 (57)	5 (71)	1.000
• Laparotomy	3 (43)	2 (29)	
Time elapsed since medical treatment (surgery or oncological treatments) (years)	4.0 (0-7.0)	9.0 (9.0-9.0)	0.030*

Mann-Whitney U tests (continuous variables)
Fisher's exact tests (categorical variables)
Level of significance: ≤0.05

RESULTS – DISCUSSION

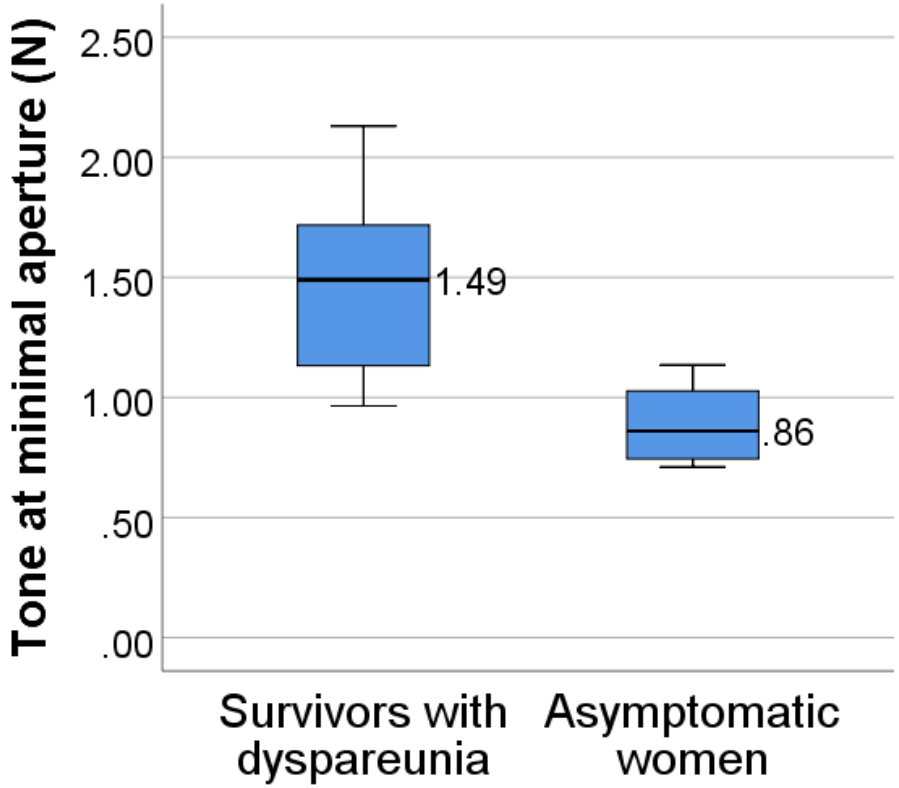
1. PFM function

Parameters	Survivors Median (IQR)	Asymptomatic Median (IQR)	p value
Tone at minimal vaginal aperture (N)	1.49 (1.09-1.72)	0.86 (0.72-1.14)	0.018*
Tone at maximal vaginal aperture (N)	11.59 (5.95-15.74)	12.48 (9.11-16.60)	0.482
Maximal vaginal aperture (mm)	17.67 (14.90-39.27)	33.79 (26.82-40.97)	0.225
Strength (N)	4.11 (1.16-4.80)	3.61 (0.98-4.08)	0.655
Speed of contraction (N/s)	4.35 (0.77-9.54)	8.13 (1.55-9.87)	0.406
Coordination (number of rapid contractions)	6.0 (5.0-8.0)	7.0 (5.0-9.0)	0.329
Endurance (50 s) (%*s)	1684.91 (802.36-2030.46)	2039.09 (1862.15-2840.49)	0.048*

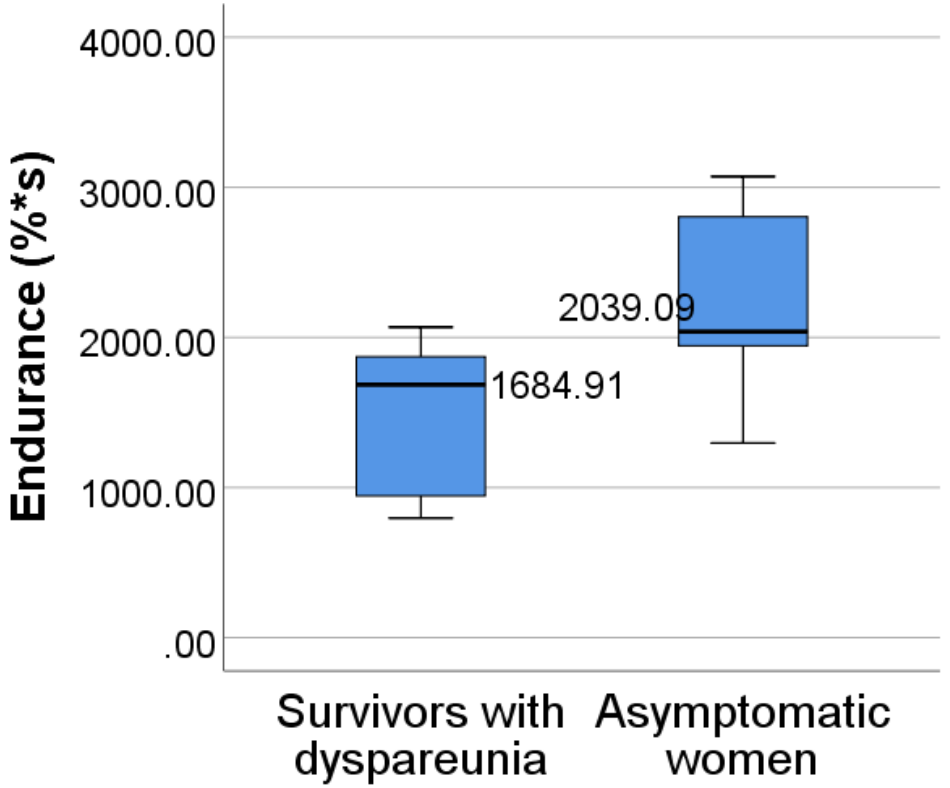
Mann-Whitney U tests
Level of significance: ≤0.05

RESULTS – DISCUSSION

1. PFM function



p value = 0.018*

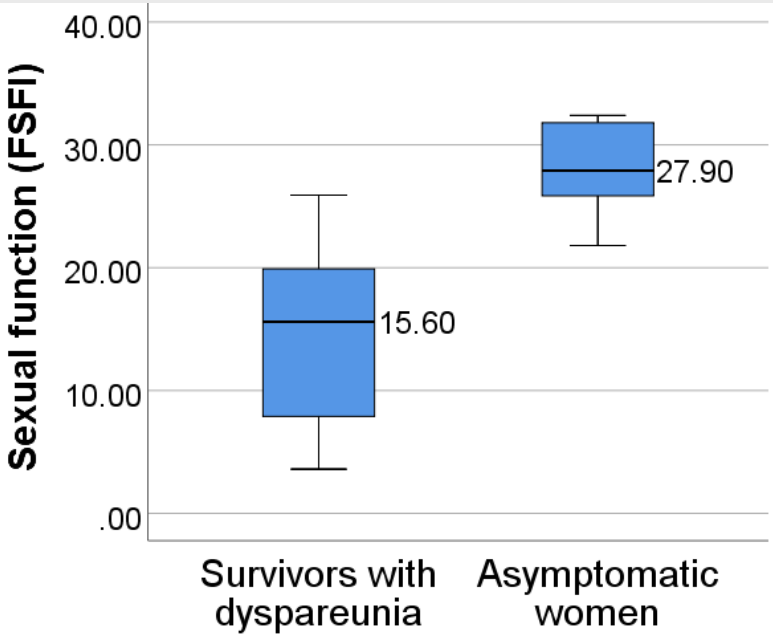


p value = 0.048*

RESULTS – DISCUSSION

2. Sexual function

Parameters	Survivors Median (IQR)	Asymptomatic Median (IQR)	p value
Total score /36 – Sexual function	15.6 (4.4-20.4)	27.9 (25.6-32.1)	0.004*



Mann-Whitney U test
Level of significance: ≤0.05

CONCLUSIONS

The results of this exploratory study suggest in gynecological cancer survivors with dyspareunia:

- **Impaired PFM function**
  - Higher PFM tone and lower PFM endurance
- **Impaired sexual function**

A larger study is needed to confirm these findings

This preliminary evidence can be used as empirical data to better understand PFM impairments involved in dyspareunia in this population

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Participants from the study

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THANK YOU!

QUESTIONS