



Sexual Dysfunction in Women

Brett Worly, MD, MBA, FACOG
Professor
Learning Communities Program Director
Department of OB/GYN
The Ohio State University

MedNet21
Center for Continuing Medical Education

 **THE OHIO STATE UNIVERSITY**
WEXNER MEDICAL CENTER

Disclosures

- I served as an unpaid speaker for AbbVie, Inc.

Mission Statement

- To innovate and provide expert training for OB/GYN providers and learners, inspiring motivated and effective quality clinical care that results in equitable outcomes, particularly for those with challenging social determinants of health.

Sexual Health Education- OB/GYN Residents

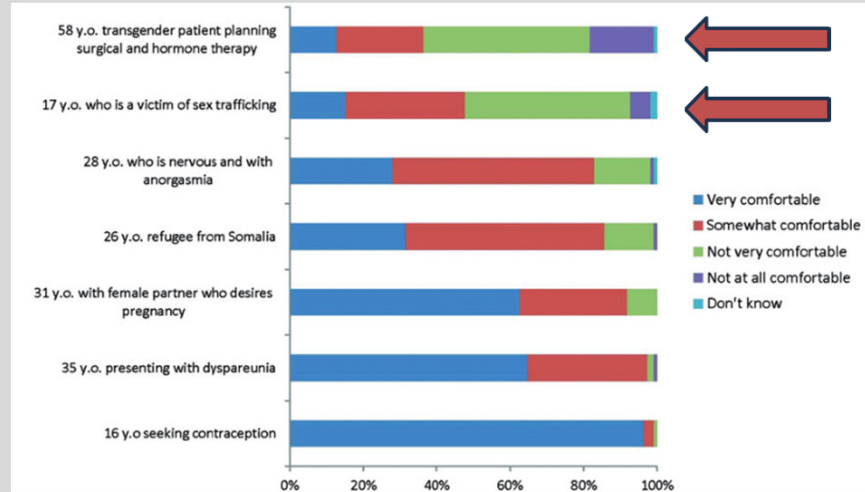
Table 4. Self-reported sexual health didactic sessions experienced during residency training (N = 802)

Didactic topic	Residency year					Differences between groups (P)
	1st n = 247	2nd n = 205	3rd n = 204	4th n = 146	All years n = 802	
Gender issues (LGBTQ) and sexual health	81 (32.8)	106 (51.7)	120 (58.8)	75 (51.3)	382 (47.6)	*
Screening for human sexual trafficking	33 (13.4)	33 (16.1)	41 (20.1)	28 (19.2)	135 (16.8)	*
Screening for sexual violence (including domestic and rape)	114 (46.2)	117 (57.1)	136 (66.7)	101 (69.2)	468 (58.4)	*
Age related sexual health	99 (40.1)	108 (52.7)	97 (47.6)	77 (52.7)	381 (47.5)	*
Sexual health for women with disabilities	15 (6.1)	13 (6.3)	16 (7.8)	14 (9.6)	58 (7.2)	*
Cultural competence in sexual health (including genital cutting)	42 (17.0)	52 (25.4)	62 (30.4)	46 (31.5)	202 (25.2)	*
Therapies for sexual dysfunction	52 (21.1)	70 (34.2)	87 (42.7)	70 (48.0)	279 (34.8)	*
Etiologies of sexual dysfunction (desire, arousal, orgasmic, pain)	71 (28.7)	107 (52.2)	127 (62.3)	95 (65.1)	399 (49.8)	*

Data are n (%) unless otherwise specified.
*Insufficient power to detect differences between groups.

Worly, J Sex Med, 2021.

Sexual Health Education- Program Directors



Worly, Intl J of Sex Health, 2018.

Objectives

1. Be familiar with normal sexual behavior, gender, and sexual orientation.
2. Gain proficiency in the categories of sexual dysfunction and treatment options.
3. Be prepared to discuss sexual problems and barriers with different age and orientation groups.
4. Examine special topics in Human Sexuality:
 1. Sex trafficking
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 3. Sex for patients with disabilities

“Sexual health is a state of physical, emotional, mental and social well-being related to sexuality; it is not merely the absence of disease, dysfunction or infirmity.”

-World Health Organization
Sexual Health, 2002



Source: Pixabay

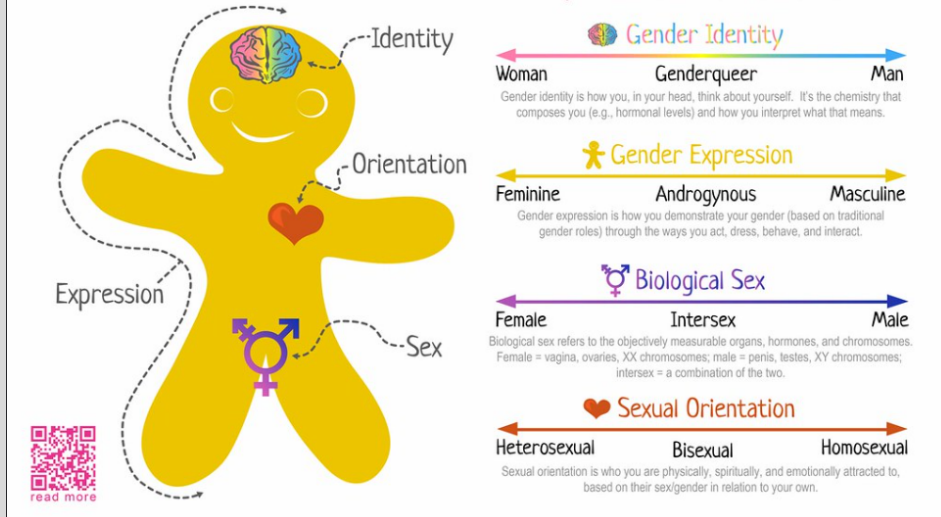
Why talk about sexual health?

- Each year in the US there are:
 - 45,000 new cases of HIV
 - 20 million sexually transmitted infections
 - 3 million unintended pregnancies
 - 1 million women are sexually assaulted
 - 12-63% sexual dysfunction prevalence

ACOG Practice Bulletin No. 706.
Worly, IJGO 2010.

The Genderbread Person

by www.ItsPronouncedMetrosexual.com



Source: <https://www.samkillermann.com/work/genderbread-person/>

Female Sexual Response Cycle

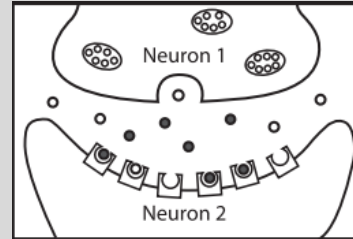


Source: Pixabay

Basson R. Clin Update Womens Healthcare, 2014.

Neurotransmitters and Hormones

- Dopamine, norepinephrine, serotonin- inhibitory and excitatory
- Hormones: oxytocin, prolactin, estrogen, androgen, melanocortin
- Acetylcholine → Nitric oxide, free testosterone, and vasoactive intestinal peptide- clitoral vasocongestion
- Orgasm- opiate receptors, serotonin, prolactin, oxytocin



Source: nida.nih.gov

Cacioppo, Sex Med Rev. 2017

https://nida.nih.gov/sites/default/files/worksheetsmod1_69.pdf

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Pause, Think, and Apply: Patient #1

- 54yo G3P3 with h/o cervical cancer, s/p radical hysterectomy, lymph node dissection, pelvic radiation, now with decreased sexual desire for the past 3 years, and pain with sex
- P- Permission
- LI- Limited Information
- SS- Specific suggestions
- IT- Intensive Therapy

Keshavarz, Z. BMC Women's Health, 2021.

Female sexual interest/ arousal disorder

Female sexual interest

- Lack of/ decrease in 3:
 - Interest in sex activity
 - Sex thoughts/fantasies
 - Initiation/ response
 - Excitement/ pleasure
 - Interest in response to internal/ external cues
 - Genital/ nongenital sensations
- Occurs 75-100% of time
- Distress, >6 months
- Most common- 5.4-21.4%, peaks at 40-60yo

Arousal

- Inability to complete sexual activity with adequate lubrication that causes distress, > 6 mo
- 5.4-11.4%
- Associated with anhedonia

Leiblum SR, et al. Menopause 2006
 Kalmbach, et al. J Sex Med 2011
 Shifren, et al. Obstet Gynecol 2008
 DSM V, 2013

Differential diagnosis for decreased desire

Psychosocial-spiritual

- Relationship issues
- Lack of sex education
- “Sex is wrong”
- Infidelity
- Psychological disorder
- Addiction
- Body image
- Survivor of sexual violence
- Incontinence
- Infertility

Biologic

- Medical conditions
 - Hypothyroid
 - Obesity
 - Diabetes
 - Cancer
 - Vascular diseases
 - Mental illness
- Medications
 - Psychiatric meds
 - Hormonal contraception
 - Antihypertensives
 - Opioids/Steroids
- Normal aging

Sex Therapy

- Sexual skills training (anatomy, communication)
- Cognitive behavioral therapy
- Mindfulness therapy
- Couples therapy

Wheeler L. Obstet Gynecol, 2020.

Bupropion

- Norepinephrine and dopamine agonist
- Small improvement on FSD scale scores
- 150mg twice daily dosing did best in RCT for patients with SSRI-induced sexual dysfunction

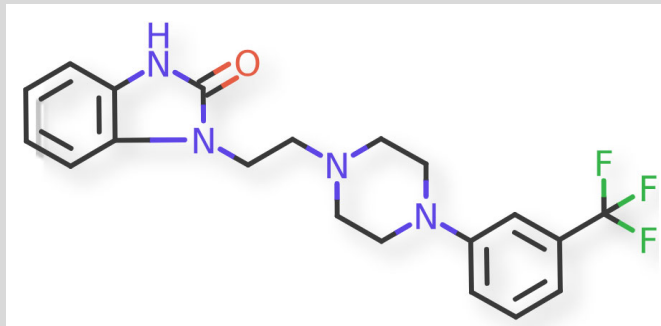


Source: Pixabay

Wheeler L. Obstet Gynecol, 2020.
Segraves RT. J Clin Psychopharm, 2004.

Flibanserin

- 5HT1A agonist and 5HT2A antagonist, 100mg daily has been approved by FDA in 2015 for premenopausal HSDD
- Inhibits serotonin and promotes dopaminergic effects, and increases NE



Wheeler L. Obstet Gynecol, 2020.
Clayton AH. Women's Health, 2010.
Source: <https://gsrs.ncats.nih.gov/ginas/app/beta/substances/37JK4STR6Z>

Bremelanotide

- Approved for use in pre-menopausal women with HSDD in 2019
- Melanocortin receptor agonist



Source: Pixabay

Wheeler L. Obstet Gynecol, 2020.
Kingsberg S. Obstet Gynecol, 2019.

Systemic Estrogen

- Lowest dose, shortest time
- Effective for post-menopausal decreased sexual interest/arousal (systemic)
- Pair with progestin therapy
- Clinical assessment is essential
- Breast/ endometrial cancer risks v. benefits



Source: Pixabay

Wheeler L. Obstet Gynecol, 2020.
Taylor HS. JAMA IM, 2017.

<https://pixabay.com/photos/woman-dragon-relax-tame-fantasy-3613722/>

Testosterone

- Transdermal patch improves desire, arousal, orgasm frequency, pleasure, satisfaction, and decreases distress in PM women



Wheeler L. Obstet Gynecol, 2020.
Simon J. J Clin Endocrin & Metabolism, 2005.

Summary of Pharmacotherapy for FSIAD

- Bupropriion 150-300mg daily
- Flibanserin 100mg daily
- Bremelanotide 1.75mg prn
- Testosterone 300mcg daily (menopause)
- Estrogen (oral) 1-2 mg daily (menopause)



Nurnberg HG, et al. JAMA 2008
Kennedy, J Sex Med, 2010
Seagraves RT et al. J Sex Marital Ther 2001

Source: Pixabay

Pause, Think, and Apply: Patient #1

- 54yo G3P3 with h/o cervical cancer, s/p radical hysterectomy, lymph node dissection, pelvic radiation, now with decreased sexual desire for the past 3 years, and pain with sex
- What are the next steps?
 - A. Sex Therapy
 - B. Work on the pain issue to see if desire increases
 - C. Estrogen
 - D. Testosterone

Female Orgasmic Disorder

- Delay or absence of orgasm following a normal excitement phase and causes distress, lasting longer than 6 months.
- 75-100% of sexual encounters
- Prevalence of 3.4-8.8%
- 18-41% of 40-81yo women
- Iatrogenic causes play the biggest role



Author: Thomas Hawk - CC BY-NC 2.0

Levin et al. 2001.

<https://www.flickr.com/photos/thomashawk/51588658010/in/photolist-2mA4HmGS-bts4fz-2nk5pGH-2nk5pGx-atLJ7H-atLJqX-atPpa9-atLHWk-atPpeo-atPpFS-2kdHXMMV-atPoe1-atPonh-atPphE-atPoyw-atLJKT-atPpPL-atPouh-atPocj1-2mth3Ww-UcbhaZ-9p5v2-2wBAt-62yBw2-9r2Cm-Ce144A-bqj2uZ-6gQkbY-4GpdX-5mdKG-2kg5Fom-2iu6BAT-9borun-7d4UIF-5NbHRB-9PCnH-0W6Nj3-pdMbqP-J1nj-67Y8Un-2oBZJUZ-7Uo9Ng-6ketog-6FceA-ccNSBj-9auLTU-25Gc928-9auLVw-emEKr8-9Bp8E>

CC: 24yo G1P1 cis-gendered heterosexual female with moderate depression on fluoxetine, who has never had an orgasm despite regular sexual intercourse for 4 years.

What are possible treatment options?

- A. Vibrator
- B. See Family Medicine/ Psychiatry to see if fluoxetine can be changed
- C. Take a better sexual history, maybe stimulation has been inadequate
- D. Normalize her experience. Many women do not have orgasms with penetrative vaginal sex
- E. All of the above

Genitopelvic pain/penetration disorder

- Dyspareunia- Pain/ fear or anxiety about pain with sex, tightening of pelvic floor
- Vaginismus- recurrent or persistent involuntary spasm of musculature of outer third of vagina with distress, 1-6%
- >6 months, 75-100% of encounters
- 10-15% of women have chronic dyspareunia

Kalmbach, et al. J Sex Med, 2011
Lowman JK, et al. Am J Obstet Gynecol
2008

Etiologies of Dyspareunia

- Vaginal dryness/
Genitourinary
syndrome of
menopause
- h/o sexual assault/
abuse
- Endometriosis
- Adenomyosis
- Uterine fibroids
- Myofascial pain
- Adhesive disease
- Vaginal stenosis
(radiation)
- Bowel/ bladder
etiologies

Witzeman, J Pain Res, 2020.

<https://www.flickr.com/photos/sexologistdrpkgupta/52690474759/in/photolist-gh8LK-2d5yB8t-m3dKNQ-m3dGbE-2kKbeGD-2kKeXKd-2mffsZA-2jJGkdG-26Np3bn-25pYrzS-E7Bx6-2grzHVe-2kSPowL-aoTxIU-2iUaiyi-qJAY56-m4XqV-rF58H-roWqGe-2oh5sm-2nJJRnv-roNXDu-2mMUjsjE-pL5R1G-JGTVVvK-2jKp1fk-2iVYdGA-2p6jAQh-2mU2hY4>

Pelvic Floor Physical Therapy

- Helpful for dyspareunia related to vaginismus, myofascial pain, vaginal stenosis, laxity, adhesive disease
- Treatments offered:
 - Soft-tissue mobilization
 - Myofascial release
 - Trigger point pressure
 - Electric stimulation
 - Vibratory stimulation
 - Pelvic floor training
 - Biofeedback, bladder/ bowel training
 - Home vaginal dilation

Vaginismus Treatment:

- Systematic desensitization of vagina with graduated dilators
- Emphasis on allowing patient to control pace and duration of sexual activity
- Pelvic floor physical therapy may be done to aid relaxation of pelvic muscles
- Vibration may be helpful
- Topical anesthesia (lidocaine jelly)

Wheeler L. Obstet Gynecol, 2020.

Genitourinary Syndrome of Menopause (Vulvovaginal atrophy)

- VVA affects 13-87% of postmenopausal women
- More frequent VVA leads to dyspareunia and infrequent intercourse
- Symptoms: dyspareunia, vaginal dryness, itching, incontinence



Source: Pixabay

Mili, Menopause, 2021.

Vaginal lubricants/ moisturizers

- Hyaluronic-based and polycarbophil products 2-3 times per week
- Coconut, olive, and vegetable oils are less expensive
- Water-based lubricants dry out
- Silicone-based lubricants do not dry out

Wheeler L. Obstet Gynecol, 2020.

Ospemifene

- Ospemifene 60mg daily is an oral estrogen agonist/antagonist, FDA approved 2013
- Female Sexual Arousal Disorder/ Sexual Pain related to moderate-severe dyspareunia due to Vulvovaginal atrophy



Source: Pixabay

Wurtz et al. Clinical Interventions in Aging, 2014.
Constantine G. Climacteric, 2015.

Topical/ Systemic Estrogen

- Lowest dose, shortest time
- Topical is preferred- rings, gels, creams, tablets (minimal systemic absorption)
- Clinical assessment is essential
- Breast/ endometrial cancer risks v. benefits



Source: Pixabay

Wheeler L. Obstet Gynecol, 2020.
Simon JA. Menopause, 2014.

Prasterone

- Prasterone (DHEA) vaginal suppositories for moderate/ severe dyspareunia with vulvovaginal atrophy associated with menopause
- Estrogen is a prasterone metabolite



Archer DF. Menopause, 2015.

<https://www.flickr.com/photos/unicity/6912751167/in/photolist-bwRE5X-oBwTAZ-ugi5Xh-uDMdep-KucuHa-8JL2Cz-aLtz38-8TVrHY-7i1S3q-kzggGV-LqSZfk-7f9Mt-dNN4Z5-tSdd9H-a4DD8Y-GhtUVH-PXB8Hp-aeWTu8-xc5JhU-9KdQRe-39bPZ-5UVn4P-51FEN9-drxgFg-6YEP5G-qtKc5f-bfZ9hD-fcNZk4-dGqyao-HCeY9-6Te851-2p9WfsV-bxkCAR-2nTXKmE-cy4XgE-cyxU5h-a1auW4-qC8qRB-H4V4x-FvtX8u-by3U2g-H4V4v-TW3WNb-7Q4RQp-H5Sh7-H4V4t-uY5KUR-seiavx-cxvyeC-2oIyayC>

CC: 41yo G3P3 postpartum FTSVD 8 months ago, who is a cis-gendered heterosexual female has vaginal dryness with insertional dyspareunia for the past 6 months

What are the first steps of treatment?

- A. OTC vaginal lubricant
- B. Vaginal estrogen
- C. Oral estrogen
- D. Ospemifeme
- E. Prasterone

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Sex in Past Year

	Men (%)	Women (%)
Total	80	65
40-49 years old	93	88
70-80 years old	53	21
Sex more than once per week	44	38

Lindau ST. NEJM, 2007.

Sexual dysfunction and age

- Physical changes of aging
 - Cancer/ Incontinence
 - Physical and social environment
 - Education
 - Past experiences
 - Cultural background
 - Relationship
- Physical changes of aging in partner

Ambler et al. Reviews in Obstetrics & Gynecology, 2012.
 Arthur, J Geriatric Oncol, 2021.
 Worly, IJGO 2010.

LBGTQI and health care

- Barriers to care
- Violence
- Psychosocial issues
 - Depression, eating disorders, suicide attempts

ACOG Committee Opinion 525, 2012.

Transgender care

- 150,000 youth and 1.4 million adults in US
- Gender incongruence- disturbance in sexual or gender identity, distress
- Barriers to care- 54% attempted suicide, 21% resort to self-mutilation
- Possible treatment options:
 - 1. Living in the gender role consistent with identity
 - 2. Cross-sex hormone therapy
 - 3. Gender affirmation surgery

ACOG Committee Opinion, 2021.

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Sexual Abuse/ Assault Survivors

- 200,000- 1 million women are survivors of rape per year in US
- Impact on future sexual relationships
- Many feel like they cannot disclose, or are not ready
- Physician-patient relationship of trust and respect can lead to eventual disclosure

ACOG Committee Opinion No. 777, 2019.

Sex trafficking

- 27 million victims of sexual trafficking worldwide, 27% children, 55% girls
- Crimes of a sexual nature for economic purposes, \$150 billion/year
- 38-62% of prostitutes start as a minor
- Reportable offense for <18yo and >65yo
- National Human Trafficking Hotline



Source: Pixabay

ACOG Committee Opinion 787, 2019.

CC: 18yo G0P0 wearing very expensive clothes, poor personal hygiene, and with recurrent vaginal discharge

The patient has a “translator from home” with her, who answers all questions for her.

What is your next step?

- A. Continue with the history and exam with the “translator” in the room
- B. Ask the “translator” to leave at an opportune time, and screen the patient for violence/ trafficking
- C. Promise the patient that you will keep her safe and call the police

Female genital mutilation/ cutting

- Clitoridectomy, excision, infibulation
- 200 million girls/ women worldwide, 30 African/ Middle Eastern countries
- Occurs on infants to age 15
- Violation of human rights
- Many complications
 - Immediate: Pain, bleeding, infection, shock, death
 - Long-term: urinary, menstrual, sexual, obstetric psychologic problems

Chappell AG. J Plast Reconstr Aesthet Surg, 2021

Sex for patients with disabilities

- Intellectual and physical disabilities are different
- Increased risk of nonconsensual sex acts
- Contraception issues- compliance
 - US Eugenics movement, Supreme Court Buck v. Bell 1927
- Decreased education
- Healthcare Power of Attorney issues
- Menstrual hygiene
- STI Screening regularly
- Pregnancy?

Holland-Hall. Pediatr Clin N Am, 2017.

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Works Cited

- Cacioppo S, Bianchi-Demicheli F, Frum C, Pfau JG, and Lewis JW. The common neural bases between sexual desire and love: A multilevel kernel density fMRI analysis. *J Sex Med* 2012;9:1048–1054.
- Basson R. Sexuality and sexual disorders. *Clin Update Womens Health Care*, 2014.13(2):1-108.
- Keshavarz Z, Karimi E, Golezar S, Ozgoli G, Nasiri M. The effect of PLISSIT based counseling model on sexual function, quality of life, and sexual distress in women surviving breast cancer: a single-group pretest-posttest trial. *BMC Womens Health*. 2021 Dec 16;21(1):417. doi: 10.1186/s12905-021-01570-4.
- Cacioppo S. Neuroimaging of Female Sexual Desire and Hypoactive Sexual Desire Disorder. *Sex Med Rev*. 2017 Oct;5(4):434-444. doi: 10.1016/j.sxmr.2017.07.006.
- Wheeler L, Guntupalli SL. Female Sexual Dysfunction: Pharmacologic and Therapeutic Interventions. *Obstetrics & Gynecology*, 2020. 136(1), 2020.
- Rogers GR, et al. (2001) Sexual function in women with and without urinary incontinence and/or pelvic organ prolapse. *Int Urogynecol J Pelvic Floor Dysfunct* 12(6):361-365.
- Rosen RC, et al. (2000) The Female Sexual Function Index (FSFI): A multi-dimensional self-report for the assessment of female sexual health. *Journal of Sexual Medicine*, 26, 191-208.
- Simon JA, Nappi RE, Kingsberg SA, Maamari R, Brown V. Clarifying Vaginal Atrophy's Impact on Sex and Relationships (CLOSER) survey: emotional and physical impact of vaginal discomfort on North American postmenopausal women and their partners. *Menopause*. 2014 Feb;21(2):137-42. doi: 10.1097/GME.0b013e318295236f.
- Stacy Tessler Lindau L, Philip Schumm, Edward O Laumann, Wendy Levinson, Colm A O'Muircheartaigh, Linda J Waite. A study of sexuality and health among older adults in the United States. *N Engl J Med*. 2007 Aug 23;357(8):762-74. doi: 10.1056/NEJMoa067423.
- AH Clayton 1, L Dennerstein, R Pyke, M Sand . Flibanserin: a potential treatment for Hypoactive Sexual Desire Disorder in premenopausal women. *J Sex & M*2010 Sep;6(5):639-53. doi: 10.2217/whe.10.54.
- Kann L, McManus T, Harris WA, Shanklin SL, Flint KH, Queen B, Lowry R, Chyen D, Whittle L, Thornton J, Lim C, Bradford D, Yamakawa Y, Leon M, Brener N, Ethier KA. Youth Risk Behavior Surveillance - United States, 2017. *MMWR Surveill Summ*. 2018 Jun 15;67(8):1-114. doi: 10.15585/mmwr.ss6708a1.
- Mili N, Paschou SA, Armeni A, Georgopoulos N, Goulis DG, Lambrinoudaki I. Genitourinary syndrome of menopause: a systematic review on prevalence and treatment. *Menopause*. 2021 Mar 15;28(6):706-716. doi: 10.1097/GME.0000000000001752.
- Coyne KS, et al. (2007) Evaluating the Impact of Overactive Bladder on Sexual Health in Women: What is Relevant? *J Sex Med*, 4:124-136.
- G Constantine 1, S Graham, D J Portman, R C Rosen, S A Kingsberg. Female sexual function improved with ospemifene in postmenopausal women with vulvar and vaginal atrophy: results of a randomized, placebo-controlled trial. *Climacteric*. 2015 Apr;18(2):226-32. doi: 10.3109/13697137.2014.954996. Epub 2014 Sep 25.

- David F Archer 1, Fernand Labrie, Céline Bouchard, David J Portman, William Koltun, Leonello Cusan, Claude Labrie, Isabelle Côté, Lyne Lavoie, Céline Martel, John Balsler, VVA Prasterone Group. Treatment of pain at sexual activity (dyspareunia) with intravaginal dehydroepiandrosterone (prasterone). *Menopause*. 2015 Sep;22(9):950-63. doi: 10.1097/GME.0000000000000428.
- James Simon 1, Glenn Braunstein, Lila Nachtigall, Wulf Utian, Molly Katz, Sam Miller, Arthur Waldbaum, Celine Bouchard, Christine Derzko, Akshay Buch, Cynthia Rodenberg, Johna Lucas, Susan Davis. Testosterone patch increases sexual activity and desire in surgically menopausal women with hypoactive sexual desire disorder. *J Clin Endocrinol Metab*. 2005 Sep;90(9):5226-33. doi: 10.1210/jc.2004-1747. Epub 2005 Jul 12.
- Sheryl A Kingsberg 1, Anita H Clayton, David Portman, Laura A Williams, Julie Krop, Robert Jordan, Johna Lucas, James A Simon. Bremelanotide for the Treatment of Hypoactive Sexual Desire Disorder: Two Randomized Phase 3 Trials. *Obstet Gynecol*. 2019 Nov;134(5):899-908. doi: 10.1097/AOG.0000000000003500.
- Rogers RG, et al. (2003) A short form of the Pelvic Organ Prolapse/ Urinary Incontinence Sexual Questionnaire (PISQ-12). *Int Urogynecol J*, 14: 164-168.
- Rogers RG, et al. (2001) A new instrument to measure sexual function in women with urinary incontinence or pelvic organ prolapse. *American Journal of Obstetrics and Gynecology*, 184(4).
- Hugh S Taylor 1, Aya Tal 1, Lubna Pal 1, Fangyong Li 2, Dennis M Black 3, Eliot A Brinton 4, Matthew J Budoff 5, Marcelle I Cedars 6, Wei Du 2, Howard N Hodis 7, Rogério A Lobo 8, JoAnn E Manson 9, George R Merriam 10 11, Virginia M Miller 12 13, Frederick Naftolin 14, Genevieve Neal-Perry 15, Nanette F Santoro 16, Sherman M Harman 17 18. *JAMA Intern Med*. 2017 Oct 1;177(10):1471-1479. doi: 10.1001/jamainternmed.2017.3877.
- Effects of Oral vs Transdermal Estrogen Therapy on Sexual Function in Early Postmenopause: Ancillary Study of the Kronos Early Estrogen Prevention Study (KEEPS)
- Novi JM, et al. (2007) Sexual function in women after rectocele repair with acellular porcine dermis graft vs site-specific rectovaginal repair. *Int Urogynecol J*, 2007.
- Creti L, et al. In: Davis CM et al editors. *Handbook of sexuality-related measures*. 2nd edition. Thousand Oaks (CA): Russell Sage; 1998. p. 261-267.
- Worly B, Manriquez M, Stagg A, Blanchard MH, Ogburn T, Carson SA, Woodland MB. Sexual Health Education in Obstetrics and Gynecology (Ob-Gyn) Residencies-A Resident Physician Survey. *J Sex Med*. 2021 Jun;18(6):1042-1052. doi: 10.1016/j.jsxm.2021.03.005.
- Worly B, Manriquez M, Stagg A, Blanchard MH, Ogburn T, Carson SA, Woodland MB. Sexual Health Education in OB-Gyn Residencies—The Program Directors' Survey. *International Journal of Sexual Health*. 30:4. 390-397. DOI: 10.1080/19317611.2018.1527425.
- Arthur EK, Worly B, Carpenter KM, Postl C, Rosko AE, Krok-Schoen JL, Quick AM, Jenkins LC. Let's get it on: Addressing sex and intimacy in older cancer survivors. *J Geriatr Oncol*. 2021 Mar;12(2):312-315. doi: 10.1016/j.jgo.2020.08.003.
- Romero AA, et al. (2003) Validation of a Spanish version of the Pelvic Organ Prolapse Incontinence Sexual Questionnaire. *American Journal of Obstetrics and Gynecology*, 102(5.1): 1000-1005.
- Segraves, Robert Taylor; Clayton, Anita; Croft, Harry; Wolf, Abraham; Warnock, Jill. *Journal of Clinical Psychopharmacology*24(3):339-342, June 2004. doi: 10.1097/01.jcp.0000125686.20338.c1

- Mitchell AJ et al. (2007) Do ultra-short screening instruments accurately detect depression in primary care? *British Journal of General Practice*, Feb. 2007: 144-151.
- Burri A, et al. (2011) Recent and lifelong sexual dysfunction in a female UK population sample: Prevalence and risk factors. *J Sex Med* 2011;8:2420-2430.
- Hatzichristou D, et al. (2010) Recommendations for the clinical evaluation of men and women with sexual dysfunction. *J Sex Med* 2010;7:337-348.
- Kalmbach D, et al. (2011) Specificity of anhedonic depression and anxious arousal with sexual problems among sexually healthy young adults. *J Sex Med*, 2011.
- Cynthia Holland-Hall 1, Elisabeth H Quint 2. Sexuality and Disability in Adolescents. *Pediatr Clin North Am*. 2017 Apr;64(2):435-449. doi: 10.1016/j.pcl.2016.11.011. Epub 2017 Feb 13.
- Worly B, Gopal M, Arya L. Sexual dysfunction among women of low-income status in an urban setting. *Int J Gynaecol Obstet*. 2010 Dec;111(3):241-4. doi: 10.1016/j.ijgo.2010.06.019.
- Laumann EO, et al. (1999) Sexual dysfunction in the United States. *JAMA* 1999;281:537-544.
- Wiegel M, et al. (2005) The Female Sexual Function Index (FSFI): Cross-Validation and Development of Clinical Cutoff Scores. *J of Sex and Marital Therapy*, 31:1-20, 2005.
- Andreasen NC, et al. (1995) *Introductory Textbook of Psychiatry*, second edition. American Psychiatric Press. P 457-473.
- Botros BM, et al. (2006) Effect of parity on sexual function: An identical twin study. *American Journal of Obstetrics and Gynecology*, 107(4):765-770.
- Whetstone S, Burke W, Sheth SS, Brooks R, Cavens A, Huber-Keener K, Scott DM, Worly B, Chelmsow D. Health Disparities in Uterine Cancer: Report From the Uterine Cancer Evidence Review Conference. *Obstet Gynecol*. 2022 Apr 1;139(4):645-659. doi: 10.1097/AOG.0000000000004710.
- Worly BL, Gur TL, Schaffir J. The relationship between progestin hormonal contraception and depression: a systematic review. *Contraception*. 2018 Jun;97(6):478-489. doi: 10.1016/j.contraception.2018.01.010.
- Wang HM, Worly BL. Inequities in Inpatient Obstetrics Pain Management and Evaluation: Age, Race, Mental Health, and Obesity. *Matern Child Health J*. 2023 Mar;27(3):538-547. doi: 10.1007/s10995-023-03602-x.
- Strand EA, Worly BL, Morgan HK, Marzano DA, Winkel AF, Bienstock J, Banks E, Katz NT, Brito LGO, Hammoud MM. How We Do It: Student Perspectives on Changes to the Obstetrics and Gynecology Residency Application Process. *J Surg Educ*. 2022 Sep-Oct;79(5):1093-1098. doi: 10.1016/j.jsurg.2022.04.006.