Update on Epidemiology and Nomenclature

ISSWSH Annual Meeting 2016

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Disclosures

- **Scientific Advisory Boards:**

Sprout, Pfizer, Emotional Brain

Objectives

Understand the epidemiology, prevalence, classification systems and models for female sexual disorders in clinical practice

Female Sexual Disorders: DSM 5

Female Sexual Interest/Arousal Disorder	302.72 (F52.22)	Lack of, or significantly reduced, sexual interest/arousal as manifested by 3 of the following: 1. Absent/reduced interest in sexual activity 2. Absent/reduced sexual/erotic thoughts or fantasies 3.No/reduced initiation of sexual activity and unreceptive to partner's attempts to initiate 4. Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (75%-100%) sexual encounters 5. Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (written, verbal, visual) 6. Absent/reduced genital or nongenital sensations during sexual activity in almost all or all (75%-100%) sexual encounters
Female Orgasmic Disorder	302.73 (F52.31)	Presence of either of the following on *all or almost all (75%-100%)* occasions of sexual activity: 1.Marked delay in, marked infrequency of, or absence of orgasm. 2.Markedly reduced intensity of orgasmic sensations

Symptoms persisted a **minimum of 6 months** and not better explained by a nonsexual mental disorder or consequence of severe relationship distress or other significant stressors and not due to effects of substance/medication or other medical condition.

American Psychiatric Association, DSM 5, 2013

Female Sexual Disorders: DSM 5

Genito-Pelvic Pain/Penetration Disorder	302.76 (F52.6)	Persistent or recurrent difficulties with 1 or more of the following: 1.Vaginal penetration during intercourse 2. Marked vulvovaginal or pelvic pain during intercourse or penetration attempts 3. Marked fear or anxiety about vulvovaginal or pelvic pain in anticipation of, during, or as a result of vaginal penetration 4. Marked tensing or tightening of the pelvic floor muscles during attempted vaginal penetration.

Symptoms persisted **a minimum of 6 months** and not better explained by a nonsexual mental disorder or consequence of severe relationship distress or other significant stressors and not due to effects of substance/medication or other medical condition.

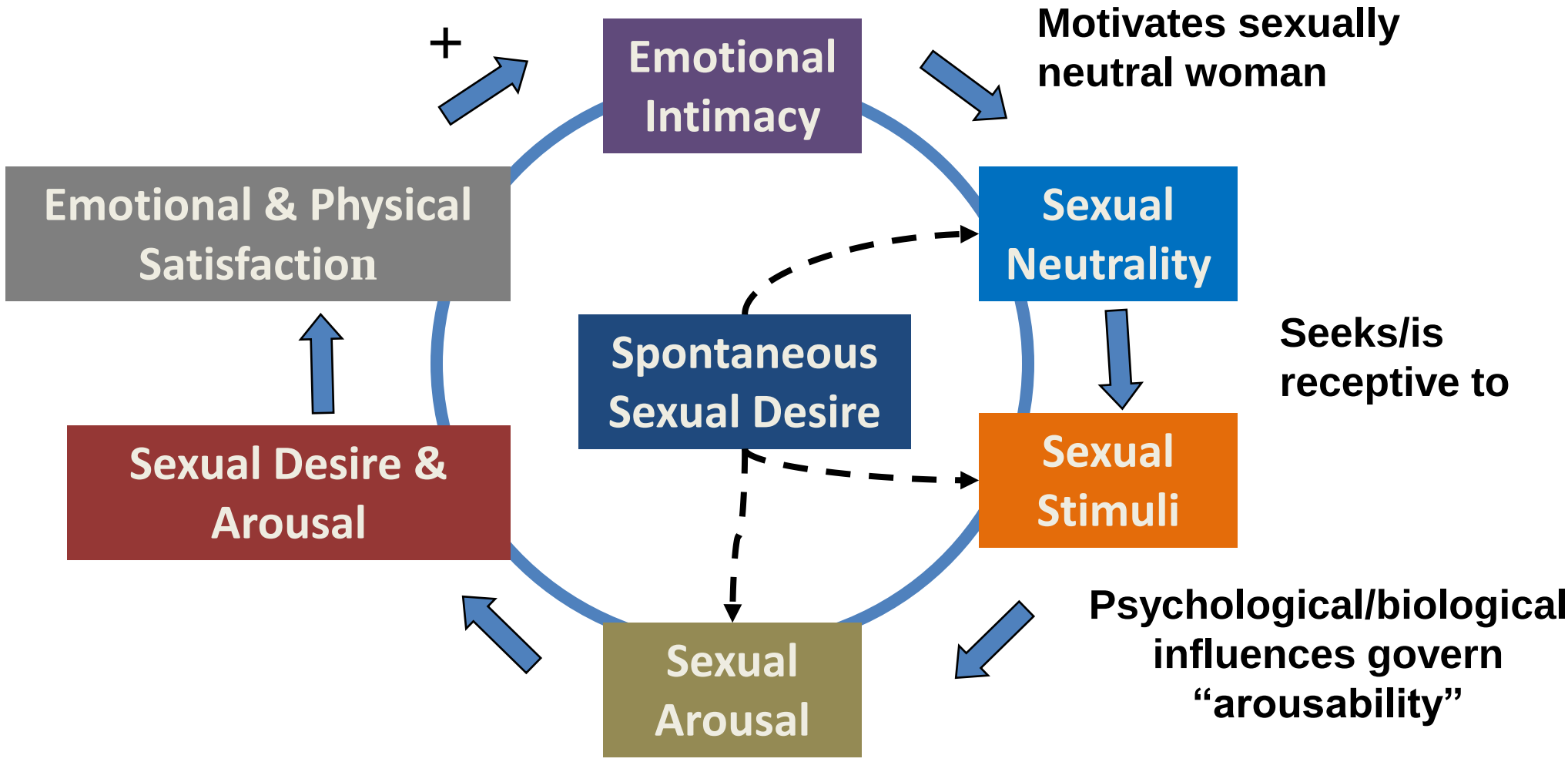
American Psychiatric, Association DSM 5, 2013

Classification: DSM-IV-TR vs. DSM-5
Female Sexual Dysfunction

Defined by Onset	Defined by Context	Characteristics
Lifelong Present since onset of sexual functioning **Acquired** Develops after period of "normal" functioning	**Generalized** Not limited to certain types of stimulation, situations, or partners **Situational** Limited to certain types of stimulation, situations or partners	Clinically significant distress & persistence Subtypes: Psychogenic, organic, mixed, unknown etiology ***Severity: mild, moderate, severe***

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Text Revision (DSM-IV-TR™). 4th ed. Washington, DC: American Psychiatric Association; 2000.

Alternative Cycle of Female Sexual Response



Basson. J Sex Martial Ther 2001.

ISSWSH Nomenclature Consensus Meeting: Mission Statement

To develop consensus among experts using available evidence, who are experienced in diagnosis, evaluation, treatment and/or research in sexual medicine for women, for appropriate nomenclature and definitions of female sexual dysfunctions.

These definitions must be applicable across disciplines and useful in both clinical and research settings, and serve as the basis of International Classification of Diseases (ICD) codes and provide regulatory guidance for women's sexual problems.

Manifestations of Hypoactive Sexual Desire Disorder (HSDD)

- **Sexual desire is a construct that is not specifically event-related.**
- **Absent or reduced spontaneous desire**
- **Absent or reduced responsive desire to erotic cues**
- **Inability to maintain desire or interest through sexual activity**
- **Loss of sexual thoughts and/or fantasies**
- **Loss of desire to initiate or participate in sexual activity, including avoidance of situations that could lead to sexual activity**
- **Is combined with clinically-significant interpersonal distress that includes frustration, grief, feelings of incompetence, loss, sadness, sorrow, worry, etc.**
- **Generalized, severity rating**

Female Genital Arousal

- Female genital arousal is a physical state arising from an interaction between genital response, central nervous system activity, and information processing of sexual stimuli.
- *Female Genital Arousal Disorder* (FGAD) is defined as an inability to develop or maintain genital arousal & subcategorized as related to:
  a. neurovascular injury or dysfunction
  b. central nervous system activity (information processing of sexual stimuli)
  c. *Although there is significant overlap in presentation of and treatments for FGAD and other sexual dysfunctions, it is a separate and distinct entity and should be classified as such.*
- Traditional specifiers (generalized vs situational) and causing or not causing significant intra or interpersonal distress apply.
- Subjective and genital arousal may not match.

Persistent Genital Arousal

Persistent Genital Arousal Disorder is a persistent or recurrent, unwanted or intrusive, bothersome or distressing, *genital dysesthesia* unassociated with sexual interest, with:

- Symptoms may lead to despair, frustrations, emotional lability, catastrophizing thoughts
- May be associated with overactive bladder and restless leg syndrome
- May be caused by pelvic or pudendal neuropathy
- Orgasm may be spontaneous, recurrent, aversive, absent, delayed, muted, or not associated with pleasure or satisfaction
- Symptoms have limited, or no resolution, or even aggravation with orgasm

Female Orgasm Disorders

- **Female Orgasmic Disorder (FOD)** is characterized by a persistent or recurrent, distressing compromise of orgasm frequency, intensity, timing, and/or pleasure, associated with sexual activity for a minimum of six months.
- ***Frequency*:** orgasm occurs with reduced frequency (diminished frequency of orgasm) or is absent (anorgasmia)
- ***Intensity:*** orgasm occurs with reduced intensity (muted orgasm)
- ***Timing:*** orgasm occurs either too late (delayed orgasm) or too early (spontaneous or premature orgasm) than desired by the woman
- ***Pleasure:*** orgasm occurs with absent or reduced pleasure (anhedonic orgasm, pleasure dissociative orgasm disorder - **PDOD**)

Post-Orgasmic Illness Disorder - POID

- **Female Orgasmic Illness Syndrome (FOIS)** is characterized by peripheral and/or central aversive symptoms that occur prior to, during, or following orgasm.
- **Central aversive symptoms** may include disorientation, confusion, impaired judgment, decreased verbal memory, anxiety, insomnia, depression, seizures (orgasmic epilepsy) and/or headache (coital cephalalgia).
- **Peripheral aversive symptoms** include diarrhea, constipation, muscle ache, abdominal pain, diaphoresis, chills, hot flashes, fatigue, akathisia and genital pain.
- *Such orgasm-associated symptoms may last for minutes, hours, or days post-orgasm and varies widely in individuals.*

GSM

Genitourinary Syndrome of Menopause: New Terminology for Vulvovaginal Atrophy from the International Society for the Study of Women's Sexual Health and The North American Menopause Society

Members of the consensus conference agreed that the term genitourinary syndrome of menopause (GSM) is a medically more accurate, all-encompassing, and publicly aceptable term than vulvovaginal atrophy.

Portman et. al. 2014: Climateric, J Sex Med, Menopause

International Consensus Conference on Vulvovaginal Pain (Vulvodynia) Nomenclature

There is an unmet medical need for a comprehensive, evidence-based set of vulvovaginal pain diagnoses that can be easily utilized by both expert and non-expert healthcare providers to establish diagnoses in their patients and to guide treatment.

A. Vulvar pain caused by a specific disorder*

- Infectious (e.g. recurrent candidiasis, herpes)
- Inflammatory (e.g. lichen sclerosus, lichen planus, immunobullous disorders)
- Neoplastic (e.g. Paget disease, squamous cell carcinoma)
- Neurologic (e.g. post-herpetic neuralgia, nerve compression or injury, neuroma)
- Trauma (e.g. female genital cutting, obstetrical)
- Iatrogenic (e.g. post-operative, chemotherapy, radiation)
- Hormonal deficiencies (e.g. genito-urinary syndrome of menopause [vulvo-vaginal atrophy], lactational amenorrhea)

*Women may have both a specific disorder (e.g. lichen sclerosus) and vulvodynia

B. Vulvodynia

- Vulvar pain of at least 3 months duration, without clear identifiable cause, which may have potential associated factors

Descriptors:

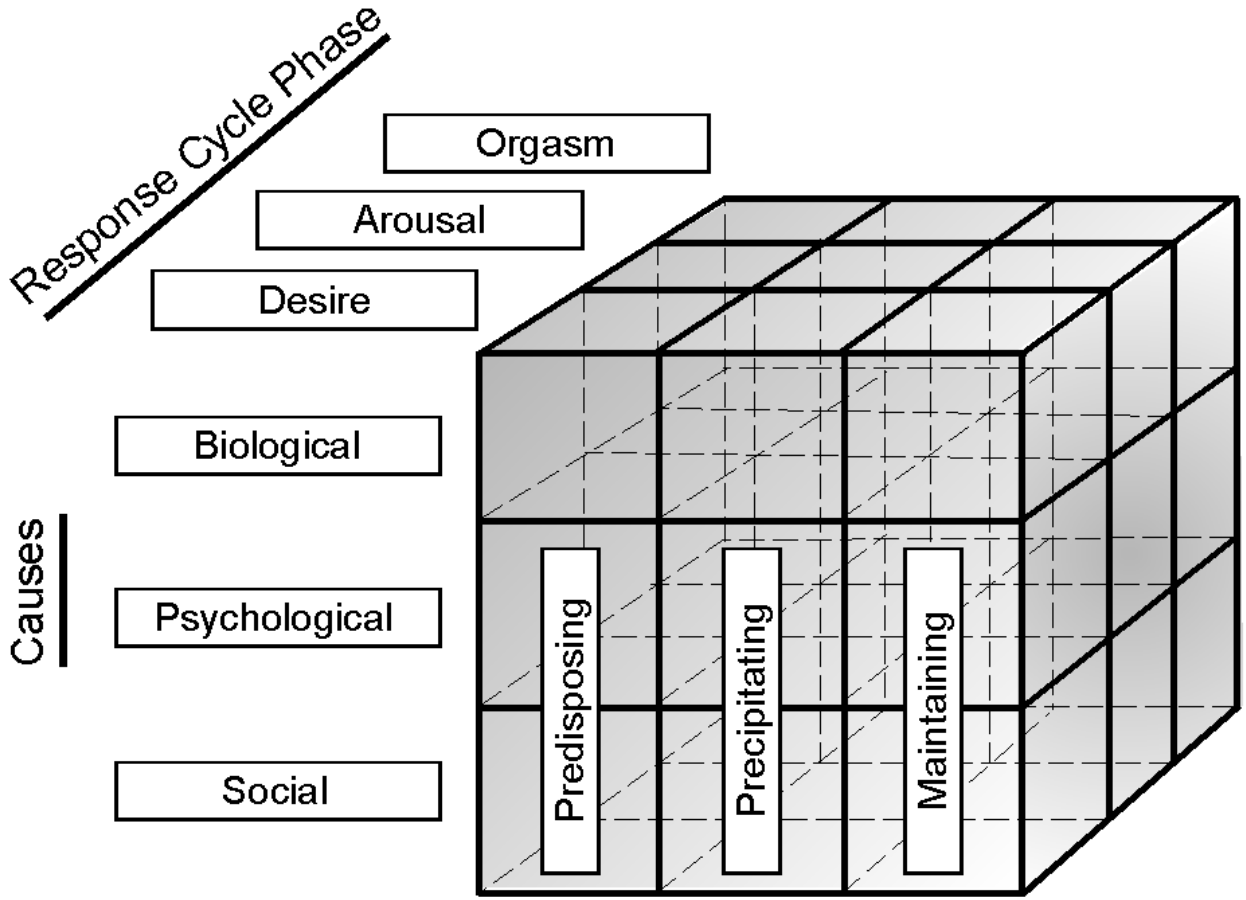
- Localized (e.g. vestibulodynia, clitorodynia) or Generalized or Mixed (Localized and Generalized)
- Provoked (e.g. insertional, contact) or Spontaneous or Mixed (Provoked and Spontaneous)
- Onset (primary or secondary)
- Temporal pattern (intermittent, persistent, constant, immediate, delayed)

Potential Factors Associated with Vulvodynia

- Co-morbidities and other pain syndromes (e.g. painful bladder syndrome, fibromyalgia, irritable bowel syndrome, temporomandibular disorder) [Level of evidence 2a]
- Genetics [2b]
- Hormonal factors (e.g. pharmacologically induced) [2b]
- Inflammation [Level of evidence 2b]
- Musculoskeletal (e.g. pelvic muscle overactivity, myofascial, biomechanical) [2b]
- Neurologic mechanisms
  - Central (spine, brain) [2b]
  - Peripheral [2b]
  - Neuroproliferation [2b]
- Psychosocial factors (e.g. mood, interpersonal, coping, role, sexual function) [2b]
- Structural defects (e.g. perineal descent) [2b]

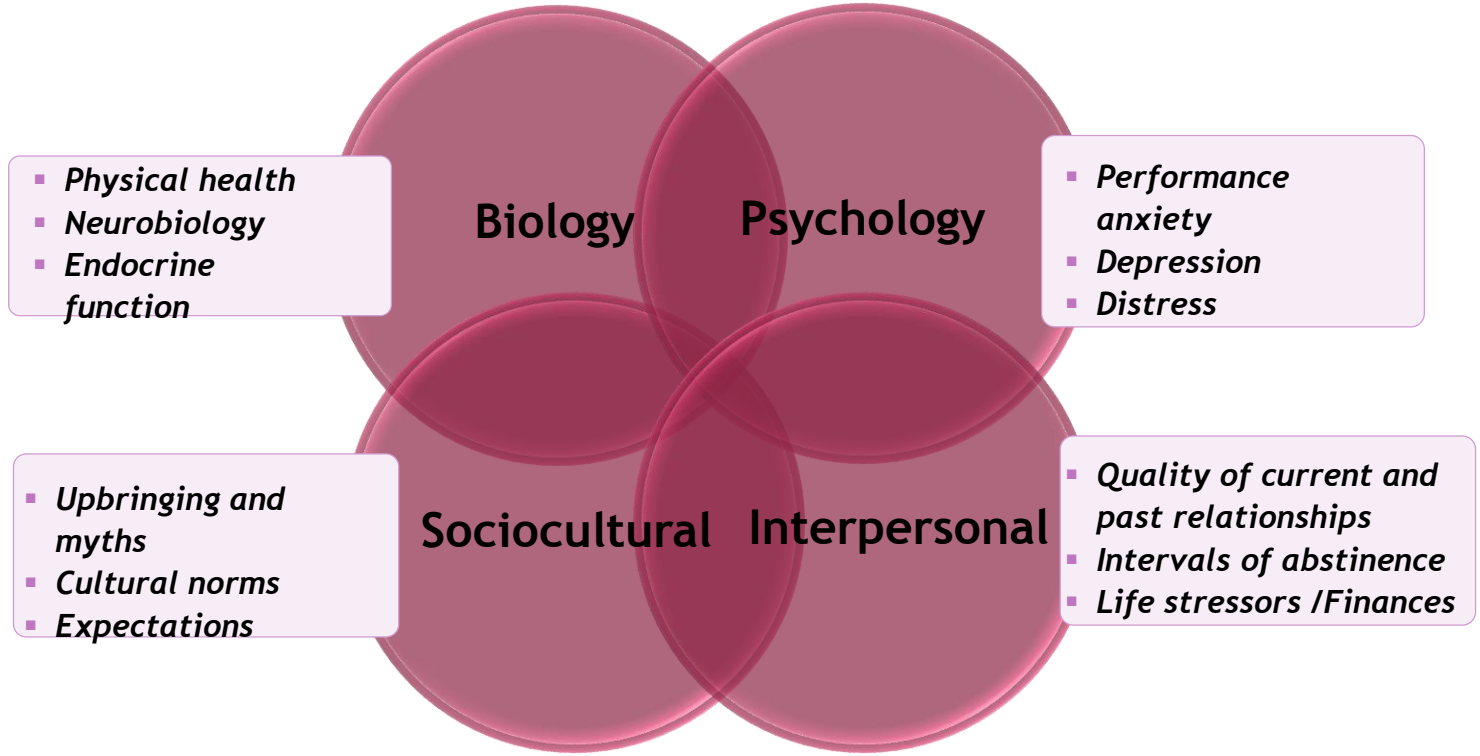
ISSWSH
International Society for the Study of Women's Sexual Health, Inc.

Integrated Model of Sexual Dysfunction



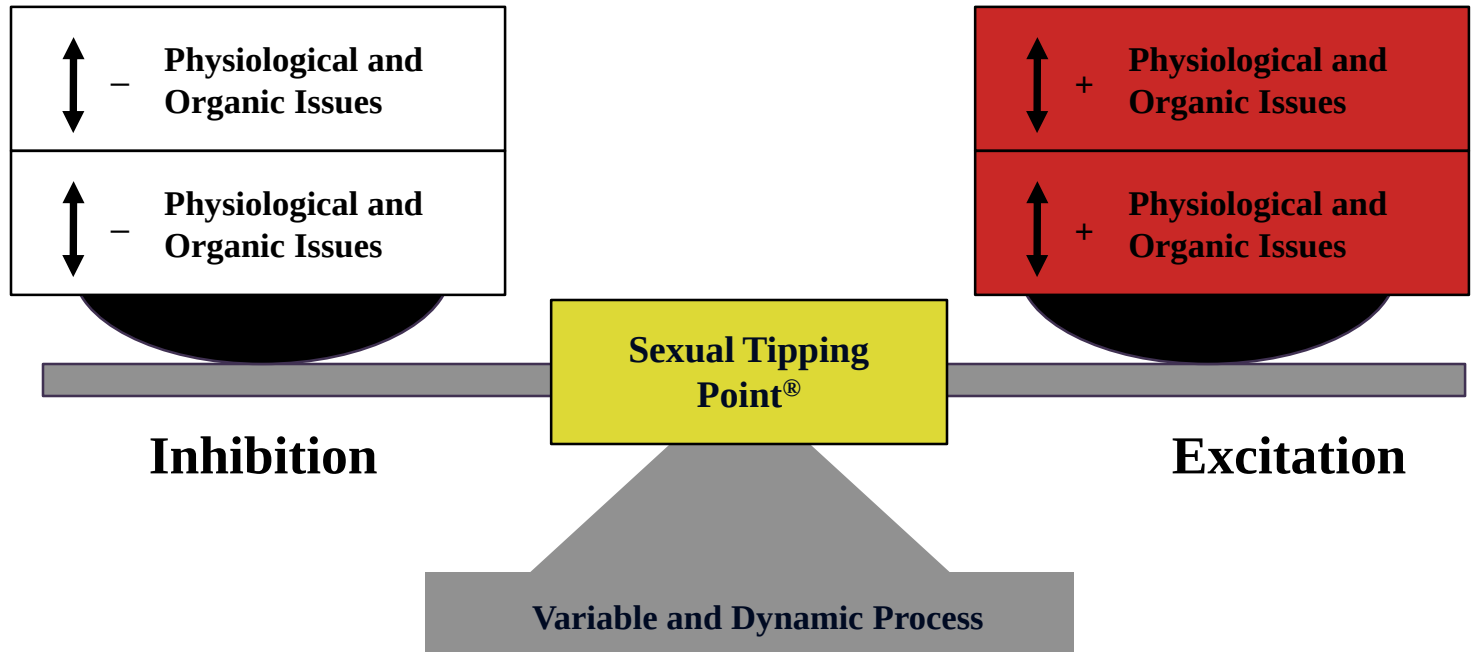
Temporal Relationship of Cause and Dysfunction

Biopsychosocial Model of Female Sexual Response



Rosen RC et al. Obstet Gynecol Clin NorthAmer. 2006;334;515-26.

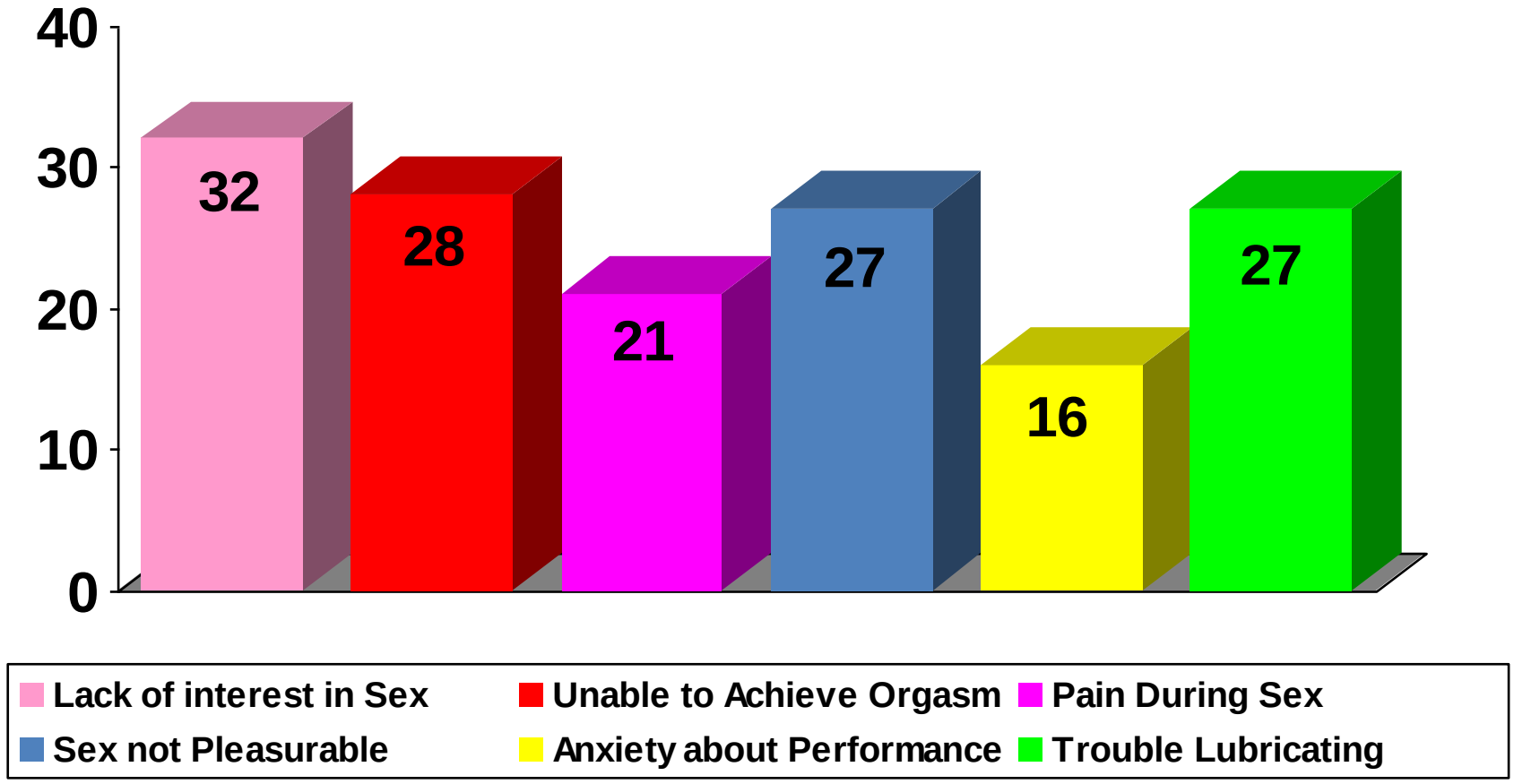
The Dual Control Model



Pfaus JG. J Sex Med. 2009;6:1506-1533.
Perelman MA. J Sex Med. 2006;3:1004-1012.

Epidemiology:
Female Sexual Dysfunction

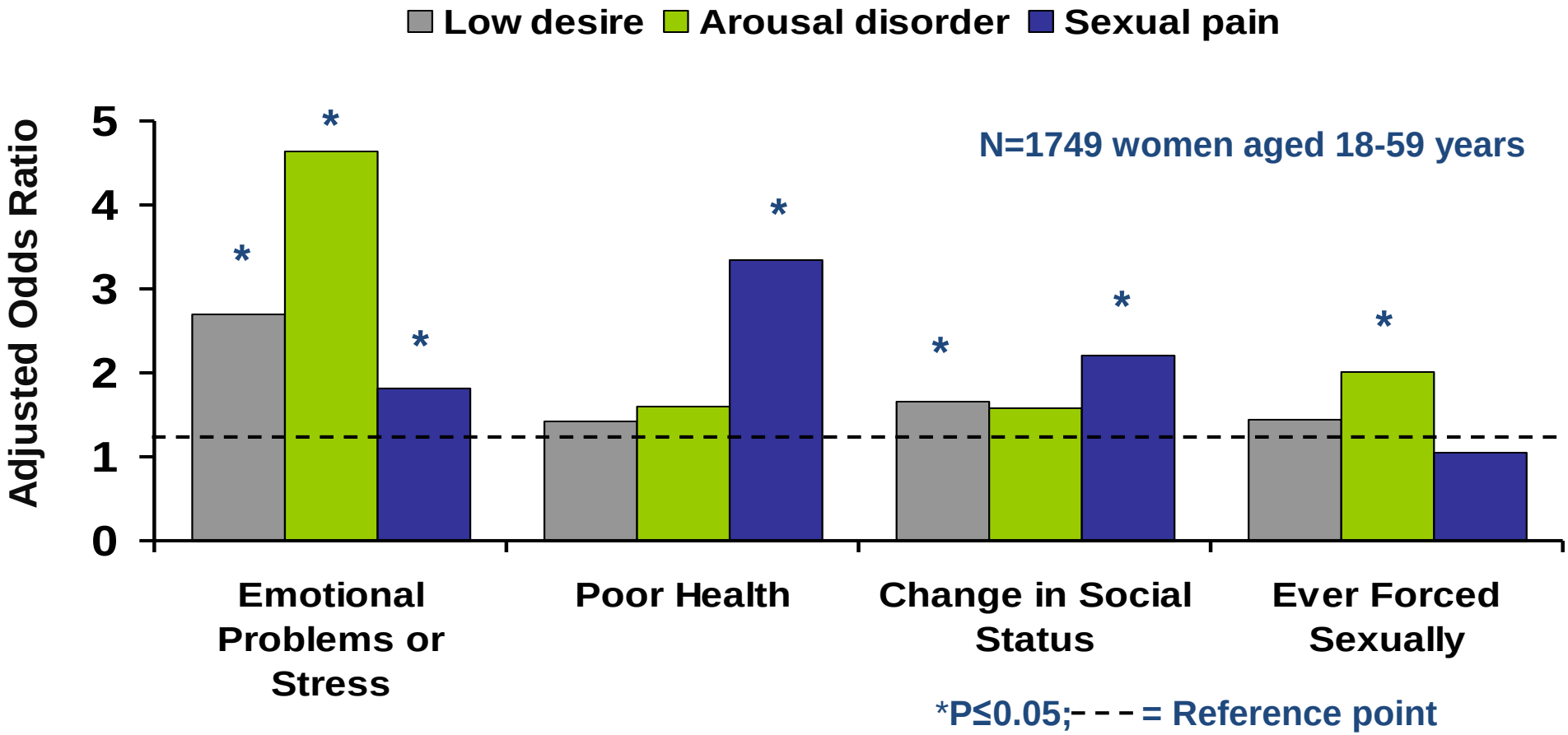
NHSLS: % of Women with Sexual Complaints



Up to __ Percent of Women Experiencing

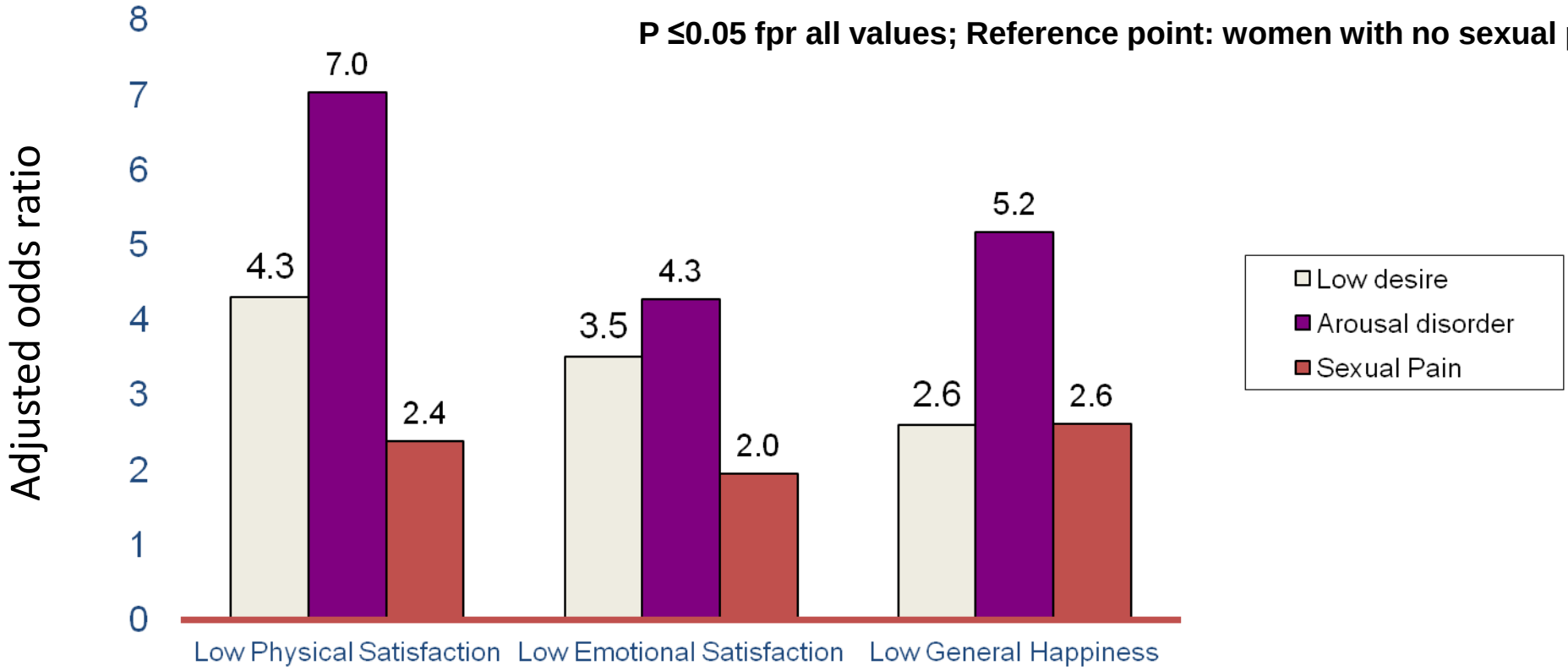
Laumann et al. JAMA 1999.281:537-544.

Factors Correlated With Sexual Dysfunction



Laumann EO, et al. JAMA. 1999;281:537-544.

Relationship of FSD To General Well-being



Laumann EO et al. JAMA 1999; 281: 537-544.

Prevalence of Female Sexual Dysfunction (PRESIDE)

Sexual Complaint	Sexual Problem	Sexual Problem Plus Distress
Desire	38.7%	10.0%
Arousal	26.1%	5.4%
Orgasm	20.5%	4.7%
Any Dysfunction	44.2%	12.0%

Low desire was the most common of the three sexual problems among women of all ages.

PRESIDE = Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking

Shifren J, et al. *Obstet Gynecol.* 2008;112:970-978.

Distressing Sexual Problems: Age Stratified (PRESIDE)

Age-stratified prevalence	Desire 2,868/28,447	Arousal 1,556/28,461	Orgasm 1,315/27,854	Any 3,456/28,403
18 - 44 years	8.9	3.3	3.4	10.8
45 - 64 years	12.3	7.5	5.7	14.8
65 years or older	7.4	6.0	5.8	8.9

Shifren JL, et al. Obstet Gynecol. 2008;112:970-978.

Correlates of Sexual Problems With Distress: Results of Multiple Logistic Regression, PRESIDE

Variable	Sexual Problems With Distress			
	Desire	Arousal	Orgasm	Any
Current depression	++	++	++	++
Chronic medical conditions				
Arthritis	+	+	+	+
Anxiety	+	+	+	+
Thyroid problem	+	+	+	+
Inflammatory/irritable bowel disease	+	+	+	+
Urinary incontinence	+	+	+	+

Note: **++ Odds ratio (OR) ≥ 2**; + OR > 1 but < 2; – OR < 1; + or – (95% confidence interval for OR includes 1)
Other variables in the models: race, parity, current use of hormone therapy, current use of antihypertensive or cholesterol-lowering medications, current smoking, cancer, ulcer, hypertension, asthma, diabetes, heart disease, and chronic pain.

Shifren et al., Obstet & Gynecol, 2008; 112:970.

HSDD Registry: Presentation of HSDD

- 1,500 women (1,000 premenopausal, 500 postmenopausal) with clinically-diagnosed HSDD, confirmed by DSDS
- 85% cited multiple factors contributing to decreased desire
- Low desire associated with frequent/always distress
- Most common factors:
  - "Stress and fatigue" - 80%
  - "Dissatisfaction with my physical appearance" - 40.8%
  - Other sexual difficulties (orgasm) – 33.5%
- Women with generalized, acquired HSDD impaired across multiple domains

Maserejian et al. J Sex Med 2010;7:3439-3448.

Prevalence of Arousal and Lubrication Problems in the HSDD Registry All Women (N=600)

- Strongest predictor of combined arousal/lubrication problems: self-reported severity of HSDD

Associations with A/L Problems:

- Premenopausal women (39%): race/ethnicity, depression, and lower relationship happiness
- Postmenopausal women (49%): surgical menopause, use of selective serotonin reuptake inhibitors

Maserejian et al. J Sex Marital Ther. 2012;38(1):41-62.

Lifestyle & Health Factors Associated with Sexual Desire, Activity, Satisfaction

Increased

- Mediterranean diet
- Exercise/walking
- Resilience
- Normal BMI
- Social support
- Social activity

Decreased

- Smoking
- Depression/somatization
- SSRIs, SNRIs, Antipsychotics
- CAD (inactivity)
- Obesity/M. Synd. (↑TGs)
- Multi-morbidity
- Urinary incontinence
- Diabetes (psychosocial factors)
- Sleep difficulties/VMS

Pontrioli et al. J Sex Med 2013;10:1044-1051.
Bach et al. J Sex Med 2013;10x:2671-2678.
Alvisi et. al. J Sex Med 2014;11:2020-2028.
Appa et. al. J Sex Med 2014;11:2744-2755.

Menopause: Factors Influencing Function

- Most significant factors affecting sexual response
  - Change in partner status/ feelings toward partner
  - Anticipation or negative representations
  - Severity of menopausal symptoms
  - Estradiol: declining levels affect vaginal dryness & dyspareunia
- Social factors ameliorate decline
  - Positive past sexual history & attitude toward menopause
  - Good physical & mental health
  - Marriage, healthy relationship, education, social class

Dennerstein L, Hayes R. J Sex Med 2005;2(suppl 3):118-132.
Prarie BA et al. Menopause 2011;18:839-844.
Trompeter et al. American Journal of Medicine 2012;37-43.
Ornat L et al. Maturitas 2013;75:261-9.
Ringa et al. J Sex Med 2013;10:2399-2408.

National Social Life, Health, and Aging Project (NSHAP)

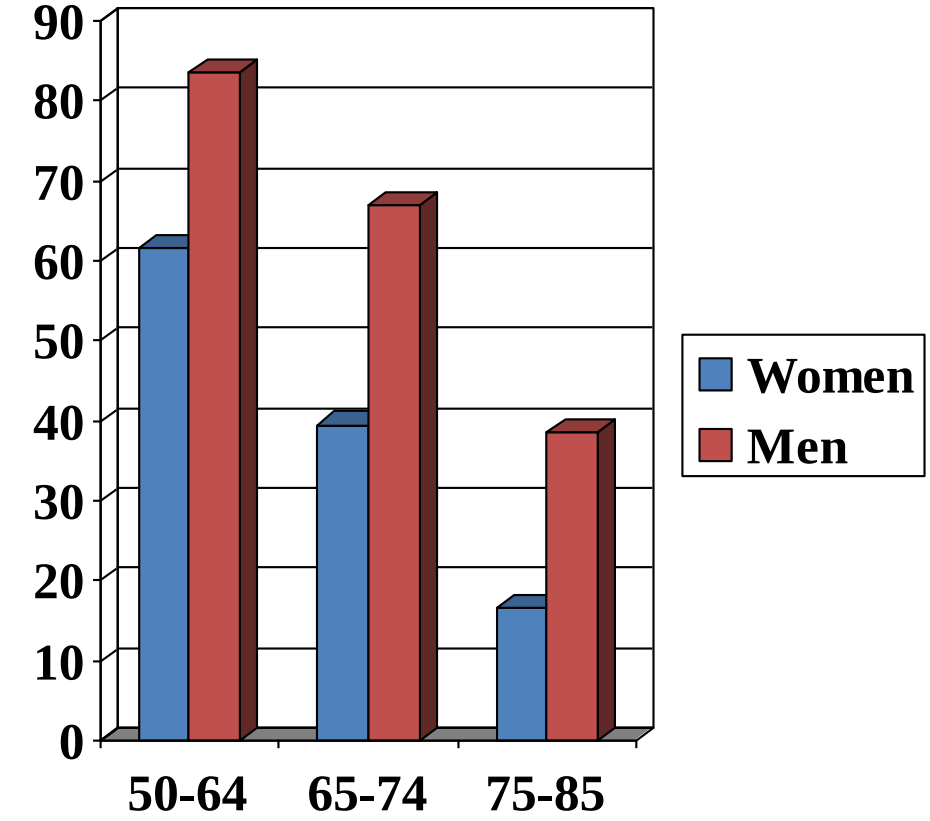
- National probability sample of older adults
  - Representative U.S ethnically diverse population
  - English, Spanish
  - 12 months
  - 75% completion
  - Interview format
- Sexual contact, not necessarily intercourse
- Sample characteristics
  - 1550 ♀, 1455 ♂
  - Ages 57-85

Lindau et al. N Engl J Med 2007;357:762-74.

NSHAP: Frequency of Sexually Activity

- Sample characteristics
  - 1550 ♀, 1455 ♂
  - Ages 57-85

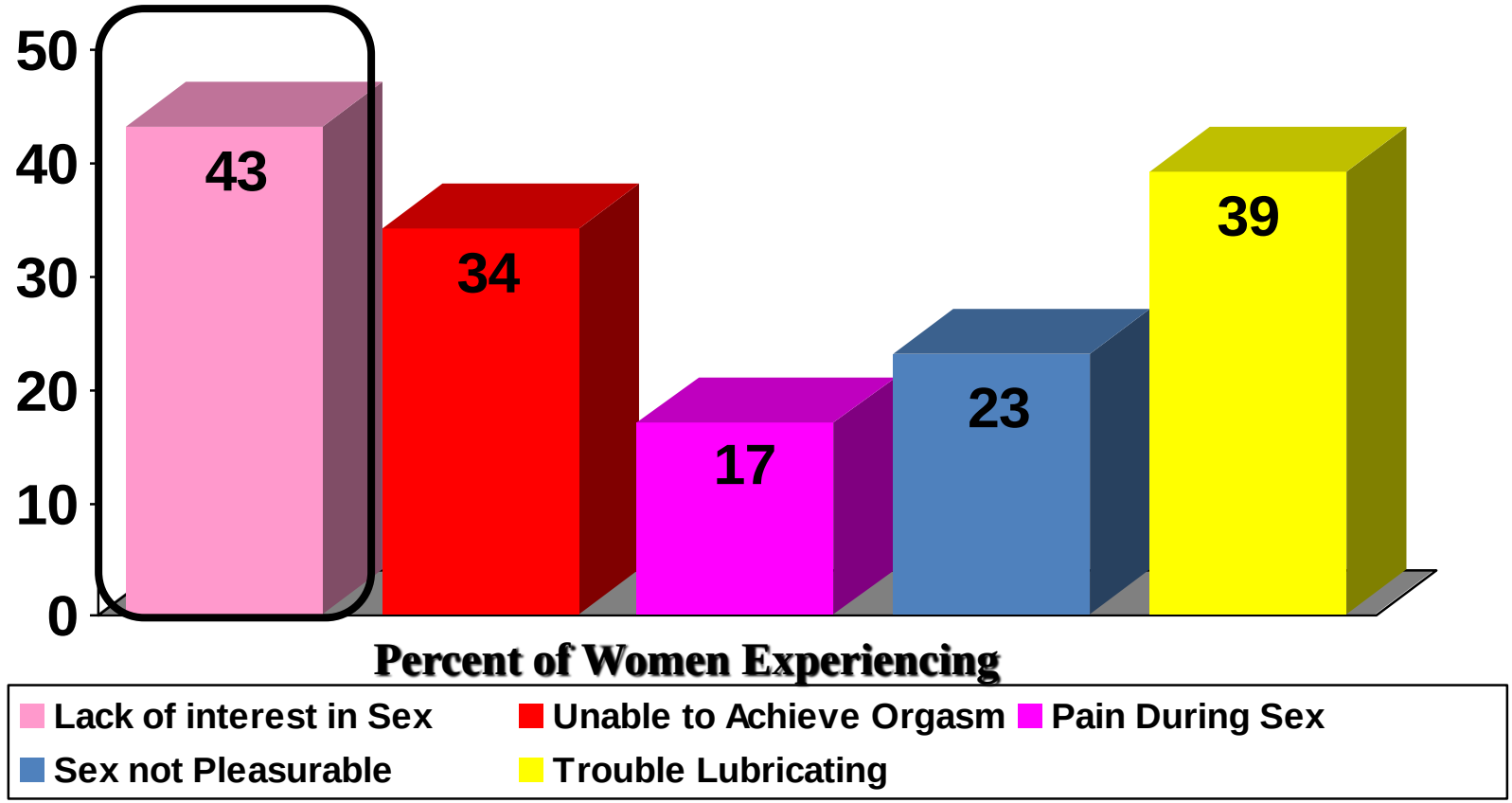
- Declined steadily with age
- Uniformly lower in women
- Associated with self-reported health



Percent Sexually Active by Age

Lindau et al. N Engl J Med 2007;357:762-74.

NSHAP: Percent of Complaints in Sexually Active Older Women



Lindau et al. N Engl J Med 2007;357:762-74.

NSHAP: Summary of Key Results

- Women: 59-97% (pain) bothered by sexual problem
- Masturbation ♀: 25% (relationship) vs. 23% (not)
- Oral sex: 31-58%

- Medication/ supplement to improve function: 1% ♀, 14% ♂

- 22% women reported having discussed sex with a physician since age 50

Lindau et al. N Engl J Med 2007;357:762-74.

Surveys of Postmenopausal Women

- **Since 2008, 6+ surveys on Women's Views of Impact of Menopause/VVA**
  - **REVEAL: REvealing Vaginal Effects At MidLife**
  - **VIVA: Vaginal Health: Insights, Views, and Attitudes**
  - **CLOSER: CLarifying Vaginal Atrophy's Impact On SEx and Relationships**
  - **REVIVE: REAL WOMEN'S VIEW OF TREATMENT OPTIONS FOR MENOPAUSAL VULVAR/VAGINAL CHANGES**
  - **Women's Voices in the Menopause**
  - **Healthy Women**
- **Consistent findings of Negative Impact of VVA on Sexual Health**
- **Barriers to Treatment**

www.revealsurvey.com, Wyeth
Kingsberg SA, et al. *J Sex Med.* 2013 Jul;10(7):1790-9
Nappi RE, Kokot-Kerepa M. *Climateric* 2012;15(1)36-44.
Simon et al. Menopause 2013 June 3, Epub ahead
Nappi RE, Kingsberg S, Maamari R, Simon J.
J Sex Med. 2013 Jun 27. doi: 10.1111/jsm.12235. [Epub ahead of print]
Nappi RE, Kokot-Kierepa M. *Maturitas* 2010;67(3):233-238.
Simon et al. Menopause 2013;20:1043-1048.
www.issmsmsna2012.org

Parish et al: International Journal of Women's Health. 2013:5:437-447.

Patient Barriers – Women's Voices

- **70% of women with VA have not discussed with their HCP**
  - **77% believed that women do not feel comfortable discussing VA with HCP, 60% because of embarrassment**
- **30% of women with VA had not spoken to anyone**
  - **Reasons include embarrassment, private, doesn't concern others, just a part of growing old and don't think others want to hear about their vaginal problems**
- **31% of women preferred that HCP initiate the conversation**
  - **Range 13-50%, US 32%**
- **Additional barriers: ageism, lack of awareness, cultural factors**

Parish et al. International Journal of Women's Health. 2013:5:437-447.

VVA: Impact and Rx Patterns

- **VVA sx affected enjoyment of sex/life/sleep**
- **Few women attributed symptoms to menopause (24%) or hormonal changes (12%)**
- **56% discussed VVA symptoms with HCP**
- **40% currently used VVA-specific topical treatments (vaginal OTC products [29%] and vaginal prescription therapies [11%])**
- **Concerns about side effects and cancer risk limited use of topical vaginal prescription therapies.**
- **OTC products (62%) - insufficient symptom relief and inconvenience**

Kingsberg et al. J Sex Med. 2013:10:1790-1799.
Nappi RE, Kokot-Kierepa M. Climacteric 2012; Early Online 1-9.
Santoro N, Korni J. Sex Med 2009;6:2133-2142.

CLOSER: Implications for Couples

- ***Clarifying Vaginal Atrophy's Impact on Sex and Relationships***
- **Vaginal discomfort related to decreased libido and pain**
- **28% women did not tell partner about discomfort**
- **82% males wanted partner to share experiences with VA**
- **Sex less often, less satisfying, intimacy avoidance**
- **Both agreed LET improved sex life**

Nappi et. al. J Sex Med 2013;10:2232-2241.
Simon et al. Menopause 2014;21:137-142.