

Chapter 26

Iatrogenic and Post-Traumatic Female Sexual Disorder

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Physicians and health care providers may contribute to sexual disorders, with a *predisposing* role, when they do not recognize and diagnose conditions that may prelude to, precipitate in or maintain a Female Sexual Disorder (FSD) [1-6]. They may act as *precipitating* factors, through the inappropriate prescription of medications that may negatively affect women's and couple's sexuality [1] (Tab.1), or through the negative outcome of surgery, obstetrics and/or of chemotherapy, hormonotherapy or radiotherapy [2-12]. A lack of respect of professional boundaries in the clinician-patient relationship is another neglected precipitating co-factor of FSD, especially for women who sought professional help in a vulnerable moment of their life [13,14] (see sub-chapter on Classification, etiology and key issues in FSD). They may behave as *maintaining* factors, through the most frequent mistake in the field of FSD: the *diagnostic omission*, which encompasses occasional or systematic diagnostic neglect, particularly in the area of biological/medical etiology of FSD [2,3,4-6,10-12] and/or comorbidity between medical conditions and FSD [1-3,4-6,11-12, 15,16]. This chapter will discuss these three major areas of iatrogenic disorders, to open a mental window on the sexual scenario we clinicians often do not consider.

The role of **post-traumatic FSD** will be briefly reviewed with a focus on spinal cord injuries [17-20], and ritual female genital mutilation (FGM) [21-24]. Sexual abuse, which may cause both a physical and emotional trauma, may be related to post-traumatic stress disorder and long term sexual disorders [25].

Iatrogenic factors predisposing to FSD

It is difficult to provide an effective intervention, if there is no mention of a problem. The omission of a frank and respectful discussion about sexual issues may contribute to FSD with different dynamics, which will be briefly reviewed with a life-span perspective. With children, the systematic neglect of thinking about their sexuality and/or about their being potential objects of sexual desire, may expose them to unrecognized abuses, which may affect their sexuality throughout their life [16,25,26]. The neglect of urogenital and proctologic co-morbidities may prevent the early diagnosis of vulnerability factors that could have been appropriately addressed, if timely diagnosed [6,7,16,26-28]. During childhood or adolescence, invasive diagnostic or therapeutic manoeuvres (urethral or vaginal swabs, cystoscopy, suturing of accidental genital traumas) without appropriate analgesia and care may be perceived as frank abuses by the frightened child. They are recalled as "the" only trauma predisposing to fear of penetration and dyspareunia in 5.8 % of young women affected with vulvar vestibulitis and hyperactive pelvic floor (Graziottin, unpublished data) .

In adolescents, the difficulty in using tampons for menstrual protection has been shown to be one of the first (neglected) signs of hyperactivity of the pelvic floor, predicting dyspareunia and vulvodinia [6,28,29]. The lack of attention, information and support to adolescents, when adequate information about effective contraception and prevention of sexually transmitted infection is not

given *before their first intercourse and during their first years of sexual activity*, may expose them to negative experiences, which may affect their sexuality [6]. Diagnosis of chlamydia, gonorrhoea, and vaginitis is now possible in adolescents using urine testing and vaginal swabs obtained by the care provider or patient. However, a complete pelvic examination is necessary to diagnose pelvic inflammatory disease (PID). It is thus important to identify patients who might have pelvic inflammatory disease to assure complete gynecologic assessment of genitourinary and sexual symptoms. An observational study in adolescent and young adults indicated that lower abdominal pain was the most common symptom (90.0%) reported by these patients. All of the patients with PID reported either lower abdominal pain or dyspareunia in their medical history compared with 56.1% of those without PID. The presence of lower abdominal pain and/or dyspareunia in the clinical history yielded a sensitivity of 100%, specificity of 44%, and positive and negative predictive value of 17% and 100%, respectively, for identifying patients given a diagnosis of PID [30]. To omit the physical examination could therefore lead to further PID complications and more severe deep dyspareunia. Other studies indicate that adolescents younger than 18, using hormonal contraception, have an OR of 4.0 of having dyspareunia and vulvodynia [6,28]. Use of hormonal contraception with a higher dosage of ethynilestradiol seems to reduce this risk [6].

In the adult life, the omission of key questions such as: “Are you sexually active? Are you happy with your sexual life?” may deprive the clinical picture of critical information that could modify the overall perception of the reported complaint. Anxiety and phobic disorders often have undiagnosed co-morbidity with performance anxiety (present in women as well) [16], with aversion disorders (see sub chapter on Sexual aversion disorders) and with vaginismus [6,27] (see the sub-chapter on Sexual Pain Disorders). Lower urinary tract symptoms (LUTS) and dyspareunia, and LUTS and arousal disorders (with vaginal dryness) have a consistent co-morbidity, due to shared pathophysiology (see sub-chapter on Sexual pain disorders) [6, 15, 16, 31-34].

Post partum amenorrhea may be associated with low desire, vaginal dryness and dyspareunia, which may be worsened by the lack of professional recognition of negative outcomes of episiotomy/rraphy [2,3].

Loss of sexual hormones after a iatrogenic menopause is associated with early onset and more distressing sexual disorders: loss of desire, arousal difficulties and dyspareunia are increasingly reported with increasing years after the menopause [4,5,9, 11,12,31,32] (see sub-chapter on FSD and on Hormonal Therapy).

In the elderly, unaddressed urinary or fecal incontinence, and/or genital prolapse may occur with FSD [7,31,33,34]. The ongoing multipharmacologic treatments, because of the multiple pathological conditions typical of the aging process, may contribute to FSD, but their potential negative effects on sexuality remain unaddressed unless the patient specifically mentions them.

Key point

The health care providers who interact with the woman during her lifespan may reduce *predisposing* factors to FSD through their early diagnosis (see sub-chapter on Classification, etiology and key sexual issues in FSD). They may also consult about FSD while addressing acute and chronic diseases – diabetes, multiple sclerosis, coronary heart disease (CHD), chronic immunologic diseases such as lupus erithematosus or cancer- that may secondarily affect sexuality. Awareness of the importance of a satisfactory sexual life should encourage clinicians to address this issue with every patient, without assuming that chronic diseases per se excludes the need, the desire or the possibility of a rewarding sexual life [5,8,9,11,12,17-20,35].

Iatrogenic factors precipitating FSD

Clinicians may actively precipitate -or worsen pre-existing unrecognized FSD- in their daily practice. This negative effect may be due to the known – but not completely avoidable - side effects of necessary medical and surgical treatment or to mistakes, negligence and overall malpractice.

Pharmacologic effects

Drug-induced sexual disorders have special characteristics: the effect dissipates with drug discontinuation or dose reduction; it is not explained by the ongoing disease or environmental stress; the onset tends to coincide with drug initiation or dose increase (although a delayed onset is possible); it is generalized, i.e. tends to be present in all sexual situations and reappears with the re-introduction of the drug [1]. Drugs more frequently associated to FSD are listed in Tab 1. As a note, it should be remembered that some drugs – such as sexual hormones, in Hormone Therapy (see sub-chapters on HT and on different FSD), hypoprolactinemic drugs, dopaminergic drugs, bupropion or vasoactive drugs, to mention a few – may have a positive effect on women' sexuality [1,5, 32, 34].

Among the drugs most widely used, a negative sexual impact is more frequently reported with:

**Antidepressants*: Selective Serotonin Reuptake Inhibitors (SSRI) are associated with loss of desire and central arousal and a specific inhibiting effect on orgasm, which increases with increasing doses [1, 36];

**Hormonal contraception*: biological, psychosexual and relational factors interact in modulating the final effect of hormonal contraceptives on women's sexual response [1,6,37,38,39]. From the biological point of view, sexual desire may be reduced by: the inhibition of the ovulatory peak of testosterone; the increase of liver production of Sex Hormone Binding Globulin (SHBG), which reduces the free fraction of plasmatic testosterone; the specific anti-androgenic effect of progestin's such as cyproterone acetate, drospirenone or norgestimate and norelgestromine; the inhibiting effect, through a negative feed-back, of vaginal dryness and dyspareunia, more frequent with "ultra light" pills, with 15µgram of ethynilestradiol [6,37-39]. A *positive motivation* to control fertility and avoid unwanted pregnancy, and satisfaction with a rewarding cosmetic results obtained with anti-androgenic hormonal contraceptive combinations (to treat acne, hypertrichosis or hirsutism) may nevertheless move the overall perception toward a neutral effect on sexual desire, or even a favourable one [38];

**Chemotherapy* has a complex effect: in pre-pubertal or fertile women it may cause permanent ovarian damage, with respectively, primary hypergonadotropic amenorrhea or premature menopause [5,9,11]. This prolonged deprivation of sexual hormones, especially in women with hormone dependent cancers, where hormone therapy is currently contraindicated, may negatively affect the whole sexual response, the younger the woman, the worse the effect, both for the impact on menopause and the impossibility to reach critical life-goals, such as having children, unless through ovidonation, where it is legal and feasible [5,9,11,34].

**Hormonotherapy*: estrogen receptor positive breast cancer has been treated with tamoxifen for almost three decades. Although reasonably well tolerated, this world-wide used drug may specifically affect sexual function. A recent study indicates that during tamoxifen therapy the most frequent complaints were hot flushes (85%), disturbed sleep (55%), vaginal dryness and/or dyspareunia (47%), decreased sexual desire (44%) and muscular-skeletal symptoms (43%) [11]. Disturbed sleep correlated with hot flushes ($p < 0.0005$) and concentration problems ($p < 0.05$). Decreased sexual interest correlated with vaginal dryness ($p < 0.0005$) and/or dyspareunia ($p < 0.0005$). After discontinuation of tamoxifen, symptoms decreased significantly. [11]. More recent treatments with aromatase inhibitors such as anastrozole, which inhibit the conversion of androgens to estrogens, may also have a negative impact on sexual response.

Negative outcomes of surgery

a) In oncology

Surgical interventions more likely to be causally associated with FSD are those indicated to treat different cancers:

**Breast cancer (BC)*

BC is the most frequent cancer in women, affecting 8 to 10 women in 100. Diagnosis and treatment may modify the woman's body-image and sexuality [8,9]. Cancer-dependent, woman-dependent and context-dependent factors interact in contributing to the individual outcome [5,8,9].

Iatrogenic factors specifically relate to *outcomes of breast surgery* and *lymphadenectomy* [8]. Mastectomy patients had significantly ($p < 0.01$) lower body image, role and sexual functioning scores, and their lives were overall more disrupted than breast-conserving therapy patients [40]. Importantly, body image, sexual functioning and lifestyle disruptions *did not* improve over time [40]. Breast conserving therapy, when oncologically appropriate, should be encouraged in all age groups. Body image issues and coping with appearance change should be addressed in patient interventions.

However, Kenny et al [41] suggest that, because of the need of adjuvant therapies, women treated by breast conservation have *better body image but worse physical function*, the latter being greater in younger patients. Negative physical and sexual symptoms may be secondary to premature iatrogenic menopause, to local sensory side effects of radiotherapy and a lack of adequate nerve sparing techniques to maintain the sensory perception of nipple and areola [8]. An otherwise excellent cosmetic reconstruction is too frequently "silent" from the tactile and erotic point of view.

A second major iatrogenic problem, in BC surgery, is lymphedema [8,42]. The surgical removal of axillary's nodes may disrupt and impair the lymphatic drainage from the arm. The arm becomes swollen and painful, causing deformity, discomfort and disability [8,42]. Lymphedema affects the visual, tactile, pain-related and proprioceptive dimensions of body image, more so when it affects the dominant arm (Fig.1). When severe, it may impair body image even more than breast surgery per se. The incidence of lymphedema ranges from 6% up to 62.5% [8,40-42]. Disfigured body image and self perception may affect the inner sense of femininity, leading to depression and avoidant coping strategies.

**Gynaecological cancers*

i) cervical carcinoma may require radical surgery and radiotherapy [5,9,43]. Radical surgery may shorten the vagina, thus reducing its "habitability," which may be further reduced by radiotherapy, unless early psychosexual rehabilitation is started [43]. Vaginal dryness and dyspareunia are the most frequent complaints related to vaginal shortening, while loss of desire and central arousal may be related to the concomitant oophorectomy and cancer-related problems. Concomitant bladder symptoms, if the nerve sparing technique has not been made or has not been adequate, may further negatively impact on sexual outcomes [9,43].

ii) vulvar cancer requires a variably mutilating surgery. Poor techniques and infections may worsen the overall sexual outcome [44].

**Colon and anal cancer*

Colostomy is one of the more psychological threatened "side-effects" of anal surgery. It may affect body image, self-confidence and self-esteem, through the feeling of shame, unworthiness and inadequacy it may convey. Avoidance of sexual intimacy and sexual problem are reported in 40% of patients after colostomy [45]

***Other cancers**

§Body image, self perception, self-confidence and overall sexuality may be affected by the negative cosmetic outcomes of any type of oncologic surgery. The more vulnerable area is the face. Surgery requiring arm or limb amputation or causing asymmetry may as well contribute to inhibition in sexual relationships. It is believed that the younger the patient the higher the probability of a disrupting outcome. However, data are scant. More research is needed to define predictors of worse sexual outcomes and identify intervention for the subset of patients at higher risk of negative sexual adjustments.

b) in Gynaecology

***Bilateral oophorectomy** (BO) is the most frequent iatrogenic surgery for benign reasons affecting women's sexuality. It causes surgical menopause and the associated Androgen Insufficiency Syndrome (AIS) (see sub-chapters on Sexual Desire and Hormonal Therapy) [4,5]. Current recommendations suggest maintaining the ovaries, while performing a hysterectomy, unless a specific ovarian pathology indicates their removal.

***Hysterectomy**

Controversy on outcomes of hysterectomy persists [46]. Most studies suggest an improvement of women's sexuality after a total hysterectomy (i.e. leaving the ovaries on site). The benefit could be due to the relief from menometrorrhagia and breakthrough bleeding and associated anaemia and dysmenorrhoea [46]

***Colporrhaphy**

A Medline search from 1966 to 2004 and a hand-search of conference proceedings of the International Continence Society and International Urogynaecological Association from 2001 to 2004 were performed. The success rates for the anterior colporrhaphy vary widely between 37% and 100%. Abdominal sacrocolpopexy combined with paravaginal repair significantly reduced the risk for further cystocele surgery compared to anterior colporrhaphy and sacrospinous colpopexy. The abdominal and vaginal paravaginal repair have success rates between 76% and 100%, however, no randomized trials have been performed. Different anatomical out-comes have to be tempered against complications including mesh erosions, infections and dyspareunia [47].

Negative outcomes of Radiotherapy

Radiotherapy may specifically damage sexuality through two major mechanisms [5,8,9,11]. Total body radiotherapy, associated with bone marrow transplant, may be associated with sexual disorders because of associated premature menopause, with the cohort of climacteric symptoms [5]. The negative impact on sexuality may be worsened by asthenia and fatigue, due to the primary neoplastic disease and the need of immunodepressants, when inadequate host/donor compatibility leading to Graft Versus Host Reaction requires chronic immunomodulating treatment [5].

Pelvic radiotherapy – for anal, cervical or bladder cancers - may specifically damage vaginal habitability, causing retraction, vascular damage, loss of lubrication, vaginal dryness and dyspareunia [9,12,43].

c) in Obstetrics***Abortion**

Termination of pregnancy (TOP) may have long term negative effects on women's sexuality. One hundred three women, who underwent an induced abortion by vacuum aspiration, were interviewed 1-3 weeks before surgery and 6 months later. The data analysis report symptoms of fatigue (39%),

feelings of guilt (35%), sadness (34%) and anxiety (29%). Thirty-one percent of women presented with at least one sexual disorder, 18% a decrease in sexual desire, 17% orgasmic disorders, 12% vaginal dryness and 11% dyspareunia. These sexual disorders were correlated with anxiety and symptoms of depression following TOP. Six months after TOP, 57% of the women reported no change in their sexual satisfaction, 17% were 'more satisfied' and 7% 'less satisfied.' Lessening of sexual satisfaction after TOP was correlated with diminished partner satisfaction ($p < 0.00001$), fatigue ($p < 0.0009$), feelings of guilt ($p < 0.01$), low frequency of sexual relations ($p < 0.01$) and anxiety over sexual relations ($p < 0.02$) [10].

***Episiotomy**

Lack of professional recognition of dyspareunia and other sexual symptoms associated with episiotomy/rraphy and vaginal dryness in lactating women is indicated as a persisting problem in current obstetrical practice [2,3,34] (see sub-chapter on Sexual pain disorders). Up to 48% of women report vaginal dryness and dyspareunia, which persists in one third to one half of women one year after delivery [2]. Sexual disorders in the post partum could be easily addressed by appropriate history taking, rehabilitation of the pelvic floor, self massage, lubricants and topical vaginal estrogen treatment when vaginal dryness and dyspareunia are complaints [2,3,34] (see sub-chapter on Sexual pain disorders).

***Delivery with pelvic floor damage**

On reviewing the available evidence, it appears that there are sufficient grounds to assume that vaginal delivery (or even the attempt at vaginal delivery) can cause damage to the pudendal nerve, the inferior aspects of the levator ani muscle and fascial pelvic organ supports [48]. Risk factors for such damage have been defined and variously include operative vaginal delivery, a long second stage and macrosomia. It is much less clear, however, whether such trauma is clinically relevant, and how important it is in the etiology of pelvic floor morbidity later in life [48].

Fecal incontinence has a female-to-male preponderance of 8:1, consistent with childbirth as the principal causative factor, although most symptomatic women do not seek medical advice until after menopause. Similarly, urinary stress incontinence is almost an exclusively female phenomenon. Obstetric injury may take the form of direct muscular damage to the anal sphincter, as occurs during a third-degree tear, and/or may be the result of cumulative damage to the pudendal nerves. Mechanical, neural and endocrine factors may all play a causative role in fecal incontinence [49]. Both fecal and urinary incontinence may deeply affect women's sexual function and sexual relationship. Early rehabilitation of the pelvic floor may reduce the impact of childbirth-related urinary and fecal co-morbidities and associated sexual disorders in mild-moderate cases [3,34].

Iatrogenic factors maintaining FSD

Not asking about and listening to patient's report or complaint concerning his/her sexuality is the first maintenance factor of FSD. The belief that FSD are substantially psychogenic or context-dependent may induce the diagnostic omission of their potential biological etiology. This thinking dichotomy – maintaining that male sexual disorders are mainly biologically rooted, while female sexual disorders are psychogenically driven- is partly responsible for the two-speed progress in sexual disorders research and approval of effective drugs.

Biological neglect is also responsible for the lack of recognition of the pathophysiology of many FSD. This deprives the woman of the appropriate diagnosis and treatment of her complaint. Sometimes the medical or surgical intervention is credited to be fully responsible for the FSD complaint, while it simply increased the woman's or couple awareness of a pre-existing problem.

FSD can be caused or precipitated by medical malpractice, due to negligence, inexperience and/or carelessness. The reader is referred to the specific texts of legal medicine.

Key point

The practical recommendation – to increase the positive curing and caring impact factor of the clinician and to avoid unpleasant and costly legal actions – is always to ask about sexuality and potential FSD, and report the information in the medical record, *before* any medical prescription or surgical intervention.

Post traumatic Female Sexual Disorder

Traumas may affect FSD through multiple mechanisms. For the sake of conciseness the analysis will be limited to spinal cord injury and female genital mutilation.

Spinal cord injury

The biological effect of a spinal cord injury (SCI) on women's sexuality depends on the level of the lesion and its severity. In women with complete upper motor neuron injuries affecting the sacral segments, the ability for reflex, but not psychogenic, lubrication, may be maintained [17-20]. In women with incomplete upper motor neuron injuries affecting the sacral segment, the ability for both reflex and reflexogenic lubrication is maintained [20]. Women with higher ability to perceive a combination of light touch and pinprick sensation in the T11-L2 dermatomes seem also to have a greater likelihood of experiencing psychogenic lubrication [17] (see sub-chapter on Orgasmic disorders).

The psychological impact of SCI may contribute to sexual disorders through depression, reduced self-esteem and self-confidence and body image concerns. Physical and emotional/motivational factors may contribute to impair SCI women's sexuality, with a spectrum of outcomes further modulated by personal and context-dependent factors (age at trauma, pre-existent satisfying couple relationship, quality of partner and family' support, access to qualified rehabilitative care) [17].

Peer reviewed literature has reported that women's motivation and desire for sexual activities seems to decrease after SCI [17-20]. However, in a qualitative study of women with complete spinal cord injury, Whipple et al, demonstrated a trajectory from Cognitive Genital Dissociation, to Sexual Disenfranchisement, to Sexual Recovery. Higher percentages of women with SCI complained of generalized hypoactive sexual desire disorder, with a parallel decrease in self-masturbation, in comparison to controls. The reported preferred sexual activities are touching, kissing and hugging [17,18] . The erotic expression seems therefore more focused on tender intimacy than on explicit sexual activity.

The ability to experience orgasm is less likely (17%) if women have a complete lower motor neuron injury affecting the sacral segments than if they have any other level of injury. Overall, data suggest that only 55% of SCI women are able to experience orgasm after injury, a percentage significantly lower in comparison to controls ($p < 0.001$) [18]. New data concerning orgasm in women with SCI is reported in the sub-chapter on Orgasm.

Female genital mutilation

The wording "Female Genital Cutting (FGC)" or "Female Genital Mutilation (FGM)" describes a cultural custom aimed at modifying the female genitalia through an invasive intervention [21-24]. FGC and FGM are used interchangeably. Practiced mostly in Islamic countries, it is *not* an Islamic practice, it is a cultural practice. The proponents of the FGM believe that: a) the practice reinforces

a woman's place in the society; b) it establishes eligibility to marriage; c) it initiates a girl into womanhood; d) female genitals are ugly, unhygienic and in need of cleaning; e) the practice safeguards virginity; f) it protects fertility; g) it enhances a partner's sexual pleasure [22]. The cutting can be performed at different ages, from birth to the pre-pubertal years. Different instruments may be used, with different invasiveness and asepsis, with a spectrum of short-term and long-term side-effects, medical and sexual [21-24]. FGM includes a spectrum of surgical excisions from partial to complete clitoridectomy, including the removal of the labia minora and/or majora, scarifying the remnants, and even inserting a matchstick to maintain a sufficient opening for urination. The four types of FGM are summarized in table 2 [24].

Associated complications can be either immediate or delayed. Their severity further contributes the sexual disorders potentially associated to FGM. At the time of the procedure, medical complications include haemorrhage, shock, infection, urinary retention, septicaemia and even death. Severe pain, because of lack of anaesthesia (except for the interventions more recently practiced by physicians in medical facilities) can contribute to emotional and physical shock. Delayed medical complications include hematocolpos, menstrual disorders, vaginal stenosis, infertility, which is reported as high as 30% when type 3 FGM was performed, urethral stenosis, recurrent bladder infections and inability to void appropriately [22,24]. Obstetric complications include prolonged labour and fistula formation between the vagina and the bladder because of the prolonged labour secondary to the altered birth canal.

Late appearing scars include démodé inclusions, neuronal, vulvare cysts and abscesses and colloid formation. The impact of FGM on women's sexuality encompasses a spectrum of outcomes. Women who suffered from early and/or late complications are more likely to report a negative impact on their sexuality, the more invasive the FMG, the higher the probability of serious consequences. A research study with 250 Egyptian women who underwent type 3 FGM showed that the 80% significantly complained of dysmenorrhoea (80.5%), vaginal dryness during intercourse (48.5%), lack of sexual desire (45%), less frequency of sexual desire per week (28%), less initiative during sex (11%), being less pleased by sex (49%), being less orgasmic (39%), and less frequency of orgasm (25%), and having difficulty experiencing orgasm (60.5%) than the uncircumcised women [50]. However, other psychosexual problems, such as loss of interest in sexplay and dyspareunia, did not reach statistical significance. The study suggests that circumcision has a negative impact on a woman's psychosexual life [50]. Other studies report that dyspareunia is the most frequently reported Female Sexual Disorder. It affects from 35% to 45% of women who underwent FGM, the wider the excision (Type 3), the higher the probability of adverse outcomes. However, research on women who *did not* complain of early or late adverse events report higher sexual desire, arousal, coital orgasm and satisfaction than uncut controls. Meaning of the procedure, the perception of a higher personal value and of a better body image because of it and the sense of a stronger social approval may modulate the psychosexual impact of the genital cutting (see the excellent review of Obermeyer [22]). Further research is needed to define the subset of women who may need sexual help after FGM. The proposal of "alternative rites" to FMG, aimed at maintaining the ritual social meaning while avoiding any physical cutting is one of the current most credited approaches to prevent this high risk and invasive practice.

Conclusion

Iatrogenic factors are increasingly recognized as predisposing, precipitating and/or maintaining co-factors of FSD. Further research is needed to quantify the extent of this causality, the role of confounders, the preventive measures that should be encouraged to reduce iatrogenic FSD and the legal implications of a claim of damaged sexuality. Clinicians should be encouraged to train in

sexual medicine and include at least the basics of sexual history taking in their clinical practice, to reduce the iatrogenic contributors of FSD. Referral to a specialist in this area is also important.

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Tab 1. Medications that can cause female sexual problems**Medications that can cause disorders of desire***Psychoactive Medications*

- Antipsychotics
- Barbiturates
- Benzodiazepines
- Lithium
- Selective serotonin reuptake inhibitors
- Tricyclic antidepressants

Cardiovascular and Antihypertensive Medications

- Antilipid medications
- Beta blockers
- Clonidine
- Digoxin
- Spironolactone

Hormonal Preparations

- Danazol
- GnRh agonists
- Hormonal contraceptives
- Antiandrogens
- Tamoxifen

Other

- Histamine H2-receptor blockers and pro-motility agents
- Indomethacin
- Ketoconazole
- Phenytoin sodium
- Aromatase inhibitors
- Chemotherapeutic agents

Medications that can cause disorders of arousal*Anticholinergics**Antihistamines**Antihypertensives**Psychoactive medications*

- Benzodiazepines
- Monoamine oxidase inhibitors
- Selective serotonin reuptake inhibitors
- Tricyclic antidepressants

Hormonal preparations

- Tamoxifen
- GnRh analogs
- Ultralight contraceptive pills

Medications that cause orgasmic disorders*Amphetamines and related anorexic drugs**Antipsychotics**Benzodiazepines**Methyldopa**Narcotics**Selective serotonin reuptake inhibitors**Trazodone**Tricyclic antidepressants (also associated with painful orgasm)*

adapted from ARHP Clinical Proceedings, 2005, pp 11 [51]

| Medication | | Desire | Arousal | Orgasm |
|--------------------------------------------------------|--------------------------------------------------------|---------------|----------------|---------------|
| Psychotropics | Antipsychotics | + | | + |
| | Barbiturates | + | | |
| | Benzodiazepines | + | + | + |
| | Lithium | + | | |
| | SSRI's | + | + | |
| | TCA | + | + | + |
| | MAO inhibitors | | + | + |
| | Trazodone | | | + |
| | Venlafaxin | + | + | + |
| <i>Cardiovascular and Antihypertensive Medications</i> | Antilipid medications | + | | |
| | Beta blockers | + | | |
| | Clonidine | + | | |
| | Digoxin | + | | |
| | Spironolactone | + | + | |
| | Methyldopa | | | + |
| <i>Hormonal Preparations</i> | Danazol | + | | |
| | GnRh agonists | + | | |
| | Hormonal contraceptives | + | | |
| | Antiandrogens | + | | |
| | Tamoxifen | + | | |
| | GnRh analogs | | + | |
| | Ultralight contraceptive pills | | + | |
| Other | Histamine H2-receptor blockers and pro-motility agents | + | | |
| | Indomethacin | + | | |
| | Ketoconazole | + | | |
| | Phenytoin sodium | + | | |
| | Aromatase inhibitors | + | | |
| | Chemotherapeutic agents | + | | |
| <i>Anticholinergics</i> | | | + | |
| <i>Antihistamines</i> | | | + | |
| <i>Amphetamines and related anorexic drugs</i> | | | | + |
| <i>Narcotics</i> | | | | + |

SSRI's = Selective Serotonin Reuptake Inhibitors

TCA = Tricyclic antidepressants

MAO inhibitors = Monoamine oxidase inhibitors

adapted from ARHP Clinical Proceedings, 2005, pp 11 [51]

Table 2. Classification of Female Genital Cutting/ Female Genital Mutilation

Type 1 Excision of the prepuce and/or partial clitoridectomy ("sunna")

Type 2 Removal of the shaft of the clitoris and partial or total excision of the labia minora

Type 3 Clitoridectomy, excision of labia minora and majora ("Pharaonic" FGM); infibulation is the reapproximation of the cut ends

Type 4 Refers to any other form of genital manipulation, eg burning, pricking or piercing

World Health Organization, 1999 [24]

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