

ISSN 2536-5185 (web)
ISSN 2536-5169 (print)Spring-2018 Issue: 08; June 30th, 2018ESR • Sex Therapy
Physiology • Expanded Orgasms
Research & ReviewSAYIN HÜ
KOCATÜRK AMechanisms of ESR
SexuS Journal 3 (8): 533-548, 2018, JUNE

Expanded Sexual Response in the Human Female: The Mechanisms of Expanded Orgasms in Women

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Abstract:

In DSM-V (2013), a new sexual disorder will be defined as “Hypersexual Disorder” in the human female, described by Martin P. Kafka and APA, according to a new scale called HDSI (Hypersexual Disorder Screening Inventory). However, lately there have been very fierce debates about the validity of HDSI in the academic circles. Recent publications on human female sexuality point out that sexual response can be enhanced and expanded in the human female (Taylor, 2002; Rhodes and Brauers, 1991; Komisaruk, Beyer-Flores, Whipple, 2006; Sayin 2010, 2011, 2012). This phenomenon has been coined as “Expanded Sexual Response” (ESR) in the human female. In the internet surveys of Winters and ours, 21.5 to 29% of women, some of which may have developed ESR, may be misdiagnosed as Hypersexual Disorder, after the validation of HDSI in DSM-V. Our various surveys and internet communications, which are still continuing, have revealed that, ESR phenomenon exists in the human female.

Definition of ESR: Being able to attain long lasting and/or prolonged and/or multiple and/or sustained orgasms and/or status orgasmus that lasted longer and more intense than the classical orgasm patterns defined in the literature.

We have investigated cases of more than 50 women who claimed to have ESR, and a control group of women who do not have ESR (NESR). The analyzed data of 35 ESR women is presented here, and the study is still continuing, some figures and percentages may change. It is concluded that some aspects of the sexual response of women with ESR were different than the women without ESR (none-ESR, NESR): 1) The ESR women experienced vaginal, clitoral and blended orgasms, as described by Ladas, Whipple and Perry. 2) The ESR women experienced multiple orgasms in most of their sexual activities. 3) The ESR women were able to attain long lasting and/or prolonged and/or multiple and/or sustained orgasms that lasted longer than the classical single orgasm and/multiple orgasm patterns defined in the literature. 4) The ESR women claimed to have strong pelvic floor muscles (PFM) compared to NESR women. 5) The libido of ESR women was very high compared to NESR women. 6) ESR women described a phenomenon called G-Spot orgasms. 7) ESR women described sensitive erogenous zones (DVZ: Deep Vaginal Erogenous Zones) in their genitalia other than glans clitoris. 8) ESR women masturbated very frequently. 9) ESR women had erotic fantasies more frequently than the NESR women. 10) ESR women admitted to have a form of altered states of consciousness during some of their prolonged orgasms.

Conclusion: We have concluded that the extents and limits of female sexual response, including ESR phenomenon in women, should be investigated thoroughly before deriving any conclusions that may lead to ambiguous pathological diagnosis patterns by certain classifications such as DSM-V.

KEY WORDS: ESR, Expanded Orgasm, Hypersexual Disorder,

SexuS Journal • 2018 • 3 (8): 533-548

Introduction:

The medical literature has mostly been interested in and focused on the pathologies of human sexual behavior. Not much research and investigation have ever been done on the limits and extents of human female's sexual potentials, such as **Expanded Sexual Response (ESR)**.

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Ancient Eastern literature is full of incidences and descriptions of elevated and enhanced levels of orgasmic response and sexual pleasure of women, utilizing many different techniques centuries ago, such as Tantrist and Taoist Love Making in India and China (Vatsyayana, 1883; Chang 1977, 1983; Schwartz, 1999; Chia 2002, 2005; Mumford, 2005; Michaels 2008). Recent publications and books in the West after 1990's point out that female sexual response can be enhanced and expanded to certain levels (Rhodes, 1991; Schwartz, 1999; Bodansky, 2000; Taylor, 2002; Zdrok, 2004; Sayin, 1993, 2010, 2011, 2012). Such results have also been reported by Masters & Johnson (1966) and Hartman & Fithian (1972). William Masters and Virginia Johnson, reported a female's sustained and long orgasms lasting for 43 seconds, coining the episode as *status orgasmus* in their famous book "*Human Sexual Response*" (Masters & Johnson, 1966). William Hartman and Mariyln Fithian, also reported the highest recorded orgasm number in the human female as 134 orgasms per hour. Since then, many occurrences about the extremes of female orgasmic response, up to 200 orgasms per hour or more, have been reported (Sayin, 1993, 2010, 2011, 2012). No physiological or psychological disorders of these high orgasmic women were ever reported. This kind of elevated number of orgasms may occur in mania, mood disorders, bipolar disorders, persistent genital arousal syndrome, hypersexuality, nymphomania, hyperthyroid function disorders, temporal lobe epilepsy, parkinsonism treated with L-DOPA, following brain trauma etc. (Sayin, 2010, 2011, 2012). However, it is also known that many women without any of these disorders may exert very high orgasmic patterns, which is not investigated by modern science and medicine thoroughly yet!

In 1991 Brauers designed a method named as "*ESO Ecstasy Program*" by which prolonged, sustained and long lasting orgasms could be attained by women, such as orgasms lasting for more than an hour (Rhodes, 1991). In 2000, Patricia Taylor reported expanded orgasm patterns of 22 women in her PhD thesis and defined the term "**Expanded Orgasm**" in the human female (Fisher, 1974, 1977; Taylor, 2000, 2002). In Patricia Taylor's research group, "*Altered States of Consciousness*" (ASC) patterns were also defined during expanded orgasms and ESR. In Taylor's study, the expanded orgasm (EO) or ESR (Expanded Sexual Response) duration was 0.2 to 60 minutes and even more in some particular cases in 22 female subjects (a total of 44 subjects or 22 couples) (Taylor, 2000). Taylor had classified her cases into four dimensions as *physical, mental, emotional and spiritual*. Taylor's cases described a deep experience of ASC such as, more pleasure; deep relaxation; heightened sensations; increased energy; temporary pain relief; energy expanding out of body; deep relaxing abdominal breathing; increased clarity and creativity; acceptance of the self and others; extra sensory perception; ecstasy; mystical experience; divine feelings; increased awareness of the body; mind connection and integration; psycho-spiritual birth and death experience; loss of illusion of spatial separation; loss of spatial dimensions, loss of sense of time; personal boundaries dissolving and merging with the divine; cosmic emptiness and void; sharing with the partner; compassion; sense of fulfillment etc. (Taylor, 2000).

Mah & Binik's study also opened a typical discussion on such altered mood states during female orgasms (Mah, 2001, 2002, 2005, 2010; King, 2010). King, Mah & Binik categorized subjective feelings of female orgasms in 10 dimensions as build-



ing sensations, flooding sensations, flushing sensations, shooting sensations, throbbing sensations, general spasms, pleasurable satisfaction, relaxation, emotional intimacy, and ecstasy (King 2010). However, in Mah & Binik's studies there was no classification of women in terms of the properties of orgasmic response, such as clitoral, vaginal, blended and/or ESR.

Expanded Sexual Response: Preliminary Definitions

We have recently defined **Expanded Sexual Response (ESR)** in various scientific meetings and papers after an international ongoing survey, which is still continuing (Sayin, 2010, 2011, 2012).

ESR has been defined as: *“being able to attain long lasting and/or prolonged and/or multiple and/or sustained orgasms and/or status orgasmus that lasted longer and more intense than the classical orgasm patterns defined in the literature”*. In the Eastern, Chinese, Indian and Tantric literature similar enhanced orgasmic experiences of females have been reported as well as some Western reports of the last decades.

Our survey research has pointed out that some women who claim to have **ESR (ESR-women)** had some main characteristics compared to the women who don't have **ESR (None-ESR, NESR-women)**; **ESR-women** had at least five or more of the following characteristics of their sexual response:

- 1) The **ESR** women experienced vaginal, clitoral and blended orgasms, as described by Ladas et al. (Ladas, 1982).
- 2) The **ESR** women experienced multiple orgasms in most of their sexual activities.
- 3) The **ESR** women were able to attain long lasting and/or prolonged and/or multiple and/or sustained orgasms

and/or *status orgasmus* that lasted longer than the classical single orgasm and/or multiple orgasm patterns defined in the literature.

- 4) The **ESR** women claimed to have strong pelvic floor muscles (PFM) compared to **NESR** women.
- 5) The libido of **ESR** women was very high compared to **NESR** women.
- 6) **ESR** women described a phenomenon called G-Spot orgasms.
- 7) **ESR** women described sensitive erogenous zones in their genitalia other than clitoris.
- 8) **ESR** women masturbated more frequently compared to **NESR** women.
- 9) **ESR** women had erotic fantasies more frequently than the **NESR** women.
- 10) **ESR** women admitted to have a form of *altered states of consciousness* during some of their prolonged orgasms and/or *status orgasmus*.

Other definitions we have presented include as:

Single Female Orgasm: Clitoral or vaginal orgasms. Clitoral orgasm is mediated by pudental nerve, vaginal orgasm is mediated by pelvic nerve. It has long been debated that some vaginal orgasms are triggered by Grafenberg's Spot (G-Spot) (Ladas, Whipple, Perry G-Spot, 1982). Clitoral orgasm is generally perceived in a local genital area, as bursting; 80 to 90 % of women have experienced it. Vaginal orgasms are said to be more satisfactory and more radiating occurring in 30 to 35 % of the female population according to Hite and Cosmo Reports (Hite, 1974; Wolfe, 1982).

Multiple Orgasms: Multiple orgasms can be either clitoral or vaginal or induced by both. There is a successive train of orgasms, generally increasing in amplitude and intensity gradually.

Blended Orgasms: Blended orgasms can be mediated by the orgasm triggering mechanism of both clitoris and spots of vaginal origin (DVZ: such as G-Spot, A-Spot, O-Spot, PFM or Cervix). A blended



orgasm is much more intense than a clitoral or vaginal orgasm alone. Both pudental and pelvic nerves mediate the triggering of blended orgasm. Blended orgasms are much more satisfactory and they are multiple orgasms. (Ladas, Whipple, Perry, the G-Spot, 1982; Komisaruk, Beyer-Flores, Whipple, The Science of Orgasm, 2006)

Definition of Status Orgasmus:

Status orgasmus is the continuous form of blended orgasms and/or clitoral/vaginal orgasms that last for starting from 1 minute to 10-15 minutes (or more). During status orgasmus a continuous orgasmic state is experienced and very few women are believed to achieve status orgasmus state. Status orgasmus can be seen in vaginal and clitoral orgasms, however mostly it is seen as an expanded/extended form of blended orgasms, in which both clitoral and vaginal orgasm reflexes are triggered at the same time. Similar orgasmic states and full body orgasms are also defined in Tantric literature. The duration may change from woman to woman. Status orgasmus was first defined by Masters & Johnson as lasting for 43 seconds in a woman in 1966. Today it is estimated that status orgasmus continues for 1 to 2 minutes, while it may last for 10 to 15 minutes, a prolonged and extended orgasmic state which ends by a giant orgasm (Big-O) that gives a big relief and satisfaction at the end. In most of the status orgasmus experiences there is usually a refractory period of 10 to 15 minutes. The number of minor orgasms in a status orgasmus may exceed from 5-10 to 20-30 (some women claim that this quantity goes up to around 50). In status orgasmus it is thought that pudental, pelvic, hypogastric and vagal nerves mediate the triggering mechanism at the same time.

The Basic Principals of Developing ESR in the Human Female

According to our international survey results, some women who practice Tantric exercises, Yoga, Kabbazah (Sahajoli, Pompoir) exercises, and some women with very high libido and excessive sexual behavior pattern can develop ESR (Sayin, 2012). **Actually, ESR is a prolonged and multiple orgasm pattern which is triggered by more than one orgasm reflex and orgasm pathway at the same time; this can be both pudental and pelvic nerves mediated orgasm reflexes or a combined orgasm reflex of pudental, pelvic, hypogastric and vagus nerves.**

We have concluded that the basic constituents of ESR as;

- 1) ESR women should have experienced multiple clitoral orgasms, multiple vaginal orgasms and blended orgasms various times separately during their sexual encounters.
- 2) ESR women should have an enhanced masturbation pattern.
- 3) ESR women should have a developed, elevated and extraordinary arousal and fantasy pattern.
- 4) ESR women should have a very high libido.
- 5) ESR women should have very powerful PC muscles, such that they should squeeze the Kegel Perineometer with a pressure of more than 18-20 milibars and should sustain to continue squeezing Kegel Perineometer for more than 5 seconds.
- 6) ESR women should have the consciousness of different erogenous orgasm triggering zones in their genitals other than clitoris, such as G-Spot, A-Spot, Cervix, O-Spot, and Pelvic Floor Muscle (PFM) group etc., coined as **Deep Vaginal Erogenous Zones (DVZ)**.
- 7) ESR women should be using some sex toys and sexual novelties, innovations, such as powerful vibrators for more than



3 to 5 years of their sexual life.

- 8) **ESR** women should have experienced sexuality with very experienced and knowledgeable partners who can maintain sexual intercourse for more than 30 minutes or more in more than 50 % of their sexual encounters.

Deep Vaginal Erogenous Zones (DVZ)

In our preliminary study in 198 women some of **DVZ** were identified by **ESR** (N=35) and **NESR** women (N=163). These preliminary findings of the pilot study were presented in NACS-2012-Helsinki Meeting.

G-SPOT: The localization of *G-spot* is at the anterior vaginal wall, 2.5-4 cm inside, under the mid urethral length. In our series 63 out of 198 women admitted to be aware of their G-Spots. 55 of them (27.7 %) were positive that they had experienced *G-Spot orgasms*. 25 of these women were **ESR**-women.

A-SPOT: *A-Spot* is at the anterior wall of vagina, 2-3.5 cm below anterior fornix, under the bladder. 21 women (10.6 %) admitted to be aware of such an erogenous zone. 13 of them were **ESR**-women.

O-SPOT: *O-Spot* is between the posterior vaginal wall and the rectum, 2-4 cm below posterior fornix. 16 women (8 %) replied that they have a sensitive area at this part of their genitalia. 12 of them were **ESR**-women.

U-SPOT: No *U-Spot* has been detected in the survey.

Cervix: *Cervix* is the collum (neck) of uterus. 15 women (7.5 %) replied that their cervix is sensitive and may trigger an orgasm. 9 of them were **ESR**-women.

PFM: *PFM* are the muscle network between pubis and coccyx. 24 women (12.1 %) told that activation of *PFM* was effective for the development of an orgasm. 12 of them were **ESR** women.

Most of the **ESR women** admitted that they may have such erogenous zones, which may take part in the development of orgasm, other than glans clitoris.

Pelvic Floor Muscles (PFM, PC-Muscles, Love Muscles)

The importance of **Pelvic Floor Muscles (PFM)** has been reported by many researchers (Ladas, 1982). In our pilot study we could measure the *PFM* strengths of women in a minority of the group studied in **ESR** (N=35) and **NESR** (N=59) women by using a Kegel Perineometer. There was a statistically significant correlation between the **ESR** scores and the strengths of **PFM**.

Also **PFM** strengths were significantly higher in **ESR** women compared to **NESR** women, as well as the **ESR scores**. Although **NOT established strictly and statistically YET**, our preliminary data points out the proposal that a score higher than 100 out of 150 of **ESR Score** can be coined as **ESR**, while a 0-6 likert scale was used for each of the 25 questions. This pilot study's preliminary findings were presented in IASR-2012-Lisbon and NACS-2012-Helsinki Meetings.

Multiple Orgasm, Libido, Masturbation Sub Scale Scores were Significantly Different in ESR Women Compared to NESR Women

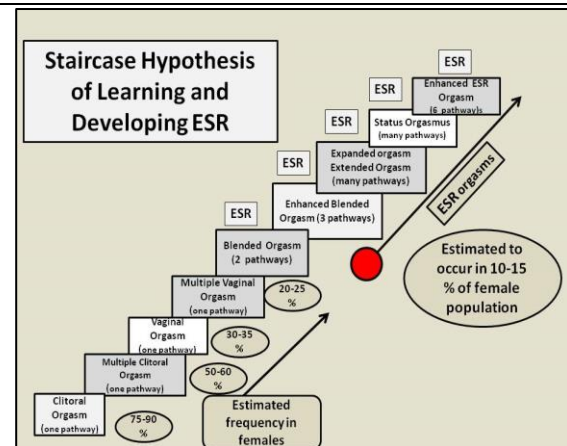
The libido of **ESR** women was higher compared to **NESR** women. **ESR** women fantasized and masturbated more frequently compared to **NESR** women. **ESR** women also had more multiple orgasms than **NESR** women. This preliminary data was presented in IASR-2012-Lisbon Meeting and NACS-2012-Helsinki Meeting.



Mechanisms of ESR Phenomenon

Actually, **ESR** is a blended orgasm, which is triggered by two or more nerve pathways which form different arches of orgasm reflexes. **ESR** is a learned behavior and reflex, which may follow the occurrence of clitoral orgasm reflex, mediated by pudental nerve. A staircase hypothesis is such that, first clitoral orgasm reflex is attained. Then multiple clitoral orgasm reflexes are established; 75 to 85 % of female population can learn this reflex during early ages. After this step, vaginal and multiple vaginal orgasm reflexes, which are mediated by pelvic nerve, are learned. The frequency of vaginal orgasms in the Western society is 30-34 % of the female population, while multiple vaginal orgasms are experienced in nearly 20-25 % of the female population. The next step is learning blended orgasms and **ESR** occurring by the triggering of pudental and pelvic nerves, as well as hypogastric and Vagus nerves, as reported by Komisaruk and Whipple (Komisaruk, Beyer-Flores, Whipple, *The Science of Orgasm*, 2006). Our survey and other estimations points out that, today only a proportion of 10-15 % of the female population can attain **ESR** and such enhanced-expanded orgasms. Learning and developing **ESR** in a woman, who has the eight constituents listed above may take 3 to 5 years or more, if she is experiencing sexuality with experienced and knowledgeable partners and using vibrators and other sex toys for attaining multiple clitoral, vaginal and blended orgasms.

To measure the **ESR** phenomenon in women, we have developed a preliminary **ESR Scale** and **ESR Score**, a questionnaire of 25 items. This scale was a combination of *SAYIN-ESR-PFM-KEGEL scale* and *SAYIN-ESR-Status Orgasmus-Scale*



Our preliminary results point out that, there is direct correlation of **ESR**-Scores and strength of pelvic floor muscles (PFM), the masturbation frequency, elevated and enhanced orgasmic response ($r > 0.7$) (Sayin, 2011). It is concluded that, the more powerful the strength of the PFM, the stronger the intensity, duration and pleasure of the orgasmic pattern in **ESR**-women. Also our research pointed out that "*orgasm screams*", which increase the strength of PFM by means of elevating intra-abdominal pressure, enhance the orgasmic pattern and orgasmic pleasure in many women (Sayin, 2012). Our extensive survey and research on **ESR** is still continuing.

A Special Method to Induce Expanded ESR Orgasms in Women: Four Spot Method

In the women who have developed **ESR**, an effective method is described to induce prolonged orgasms:

Stimulation of **G-spot** (*coitus, manual, electrical or vibe*), **Deep Vaginal Erogenous Zones (DVZ)** (*coitus, vibe, electrical, or manual*), **glans clitoris** (*cunnilingus, manual, vibe, or electrical*), **clitoral complex** (*coitus, vibe, electrical, or manual*), **anus** (*coitus, vibe, or manual*), **nipples** (*mostly manual, or vibe*) and **the BRAIN** (*fantasies, learned sexual behavior patterns*) **AT THE SAME TIME**, may start to induce blended



orgasms in a minority of women after certain numbers of trials, by means of triggering more than one orgasm reflex pathways. The vibration frequency of effective vibes differs from spot to spot (60-120 Hz); also, vibe frequency may be variable in different women. For coitus, a male partner should be maintaining intercourse for more than 30 minutes. For oral sex, a continuous stimulation more than 20-30 minutes should be maintained (Sayin, 2012).

In Four Spot Method, male partner uses his left hand's second and third fingers to stimulate the G-Spot upward, fourth finger of the left hand is used to stimulate anus. The head is in between the legs of the woman to perform cunnilingus, which should be continued for at least 30 to 40 minutes, with up and down continuous movements of the tongue (1-3 Hz). The right hand should be stimulating the left nipple of the women. Thus anus, G-Spot, glans clitoris, nipples are stimulated at the same time until she reaches a series of orgasms, which may last for more than 2-5 minutes. In between these stimulations, rotating probe and vibrating vibes can be used to stimulate the deep vaginal erogenous zones (**DVZ**) (Sayin, 2012, ESR: Ultra Orgasm in Women).

The Neurological and Neurochemical Basis of ESR

The neurological, psychological and neurochemical mechanisms of emerging of **ASC** during an **EO** and an **ESR** are not investigated and explained thoroughly yet. The main mechanisms of **ASC** can be correlated with the abruptly released neurotransmitters in certain parts of the brain and the activation and/or deactivation of different parts of the brain.

It is reported that during a single orgasm developing by masturbation or by

intercourse, *dopamine* (Stahl, 2001; Brown, 2007; Passie, 2005; Kruger, 2002, 2005, 2006), *prolactin* (Passie, 2005; Kruger, 2002, 2005, 2006), *oxytocin* (Stahl, 2001; Argiolas, 2003; Passie, 2005; Krüger, 2002, 2005, 2006), *melanocortin* (Brown, 2007), *serotonin* (Stahl, 2001; Brown, 2007) *norepinephrine* (Stahl 2001) and *endogenous opioid peptides* (Argiolas, 2003) are released and involved in the mechanisms of orgasmic and post orgasmic mind states. Acute dopamine release is a pleasure inducing factor during the female orgasm (Stahl, 2001; Brown, 2007, Kruger 2002, 2005, 2006). It is well documented in the literature that dopamine, serotonin, norepinephrine, endogenous opioid peptides induce changes in the mood and consciousness. The extraordinary subjective feelings during female orgasm can be caused by the abrupt *robust* changes in the neurotransmitter concentrations at the synaptic clefts at certain parts of the brain, mainly in the sensory cortex and limbic system. Namely, the powerful and longer the orgasmic state, the considerable and substantial, the alterations will be.

The intensity of an orgasm, and/or expanded orgasm or **ASC** induced by **ESR** may also be correlated with the activation and deactivation of certain areas of the brain. Komisaruk's research group, who have been doing fMRI studies during female orgasm, recently found heightened activation in the prefrontal cortex (PFC) during female climax - something not seen in the previous studies of female orgasm (Komisaruk, 2004, 2005, 2011). Surprisingly, this was also the case in the individuals who can achieve orgasm by thought alone, a recently defined case of '*brain orgasms*'. With fantasy and self-referential imagery often reported as being part of the sexual experience, Komisaruk et. al. investigated if the PFC might be playing a key role in creating a physiological response from



imagination alone. According to Komisaruk, female orgasm is also a different form of consciousness (Sukel, 2011).

Georgiadis, performed similar experiments in which they found that the some brain regions “switched off” during orgasm. Specifically, they saw significant deactivation in an area of the PFC called the left orbitofrontal cortex (OFC) (Sukel, 2011). Georgiadis found that during sexual stimulation and arousal, left (L) inferior parietal lobule and L postcentral gyrus were activated in both men and women; however right (R) amygdala, R and L fusiform gyrus, R middle temporal gyrus, L inferior temporal gyrus were deactivated. During orgasm, L cerebellar vermis of anterior lobe were activated in both men and women, while R gyrus rectus, L inferior frontal gyrus, L middle frontal gyrus, L superior frontal gyrus, L medial frontal gyrus, L inferior frontal gyrus L middle frontal gyrus were deactivated in both sexes. In females R insula was more activated than males during orgasm (Giorgiadis, 2009). Georgiadis also reported that regional cerebral blood flow (rCBF) increased in the left secondary and right somatosensory cortex during arousal by means of clitoral stimulation. During clitoral orgasms however rCBF was decreased in the neo cortex, particularly in the left lateral orbitofrontal cortex, inferior temporal gyrus and anterior temporal lobe. Georgiadis found that orgasm related increases of rCBF occurred in the deep cerebellar nuclei, right caudate nucleus (Georgiadis, 2006).

Komisaruk et. al. reported that clitoral, vaginal and cervical stimulation differentially activated the regions of the sensory cortex (Komisaruk, 2011). Komisaruk & Whipple also reported some orgasms of none-genital origin, coining the term “brain orgasms”, where there was no genital stimulation, orgasm might occur in

some women (Komisaruk, 1998). Vagal nerve involvement in the development of female orgasms was also reported, defining that vagus nerve innervating uterus and cervix, supplying a by-pass pathway distant from the plexuses related with spinal cord (Komisaruk, 2003, 2004). Komisaruk and Whipple reported that during a female orgasm induced by vaginal-cervical stimulation, hypothalamic paraventricular nucleus (where oxytocin is released), amygdala, hippocampus, pre-optic area, basal ganglia, cerebellum, anterior cingulate, lower brain stem and insular-parietal-frontal cortices were activated in the female brain (Komisaruk, 2005). It is hypothesized that pudental, pelvic, hypogastric and vagus nerves are involved in the development of female orgasm and also in the occurrence of ESR and expanded orgasms (Komisaruk, 1998, 2003, 2004, 2005, 2006, 2011; Sayin, 2010, 2011, 2012).

Most probably, primarily *dopaminergic* and *oxytocinergic* pathways may be involved in the alterations of mood and subjective feelings of pleasure as the studies cited above point out. Acute releases of dopamine, oxytocin, norepinephrine, endogenous opioids and prolactin may be responsible of some of the mood changes, elevated pleasure levels and ASC patterns during prolonged orgasms and ESR.

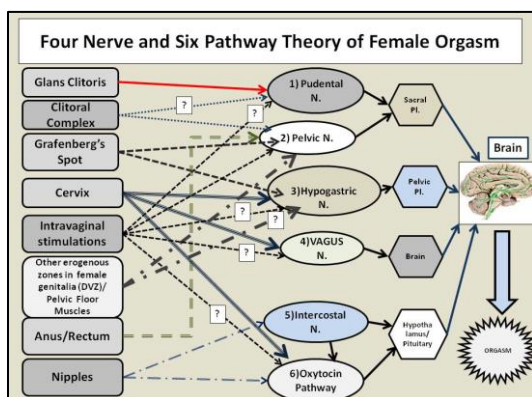
Four Nerve-Six Pathway Theory of Female Orgasm

In most of the studies of fMRI, MR and PET, investigating female orgasms, single stimulus from only one locus is studied, as it is mostly the glans clitoris. However today we know that female orgasm develops through different pathways and the stimulations of different loci (Komisaruk, 2006). For the explanation of prolonged, enhanced and expanded orgasms, “the blended orgasm theory” seems to be the most plausible one (Ladas, 1982). It is also re-



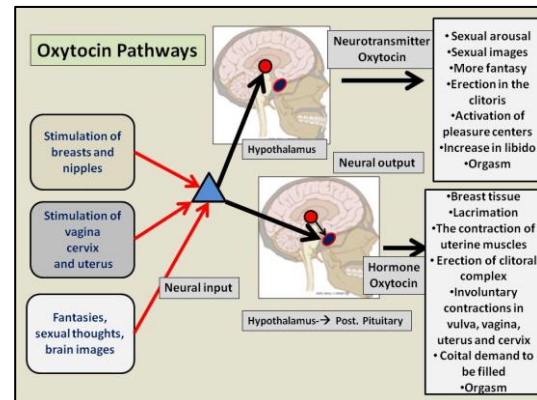
ported that female orgasms can develop through the stimulation of nipples and hence through intercostals nerves-(T2-T5 vertebrae, particularly T4)-hypothalamus-pituitary-oxytocin pathway (Komisaruk, 2006; Magon, 2011; Sayin, 2012). Oxytocin has an effect as a neurotransmitter in the brain and it is also released from the pituitary to the bloodstream (Argiolas, 2003); thus forming a double fold pathway system. Also the stimulation of DVZ (clitoral complex, cervix, G-Spot, A-Spot, O-Spot, PFM, anus) may activate pudental nerve mediated orgasm reflex partially and pelvic, hypogastric, vagus nerve mediated orgasm reflexes directly, thus supplying more pleasure input into the brain. In ESR women the pleasure input into the brain and the number of activated orgasm reflex pathways are enhanced and increased. A mathematical and neurophysiological computer model would prove that in ESR women there is much more pleasure input into the brain and brain pleasure centers.

Besides pudental, pelvic, hypogastric and vagus nerve pathways, the two oxytocin pathways may also contribute to the development of female orgasms, forming a four nerve-six pathway module for the explanation of female orgasmic response (Sayin, 2012).



We hypothesize that during ESR orgasms, multiple pathways and cerebral centers contribute to development of pro-

longed female orgasms. When multiple pathways are involved, a lot of different cerebral loci and immense changes in many neurotransmitter systems may take part in the development of female orgasms acutely, thus inducing an extraordinary orgasm patterns, also inducing altered states of consciousness in some ESR women.



In the literature it has been shown that the following loci alone may trigger female orgasm (Komisaruk, 2006; Sayin, 1993, 2010, 2011, 2012):

- Glans clitoris (in nearly 75 to 85 % of women)
- Clitoral complex (in nearly 30 to 40 % of women)
- Grafenberg's spot (in nearly 20 to 30 % of women)
- Vaginal intercourse (in nearly 30 to 35 % of women)
- Pelvic floor muscles (frequency unknown)
- A-Spot (frequency unknown, but estimated to be very few)
- O-Spot (frequency unknown, but estimated to be very few)
- Cervix (frequency unknown, but estimated to be very few)
- Nipples (frequency unknown, but estimated to be very few)
- Ear lobes (frequency unknown, but estimated to be very few)
- Anal stimulation (frequency unknown, but estimated to be very few)

These loci carry sexual arousal impuls-



es of pressure, vibration, heat-cold, pain, touch, etc. to five nerves (pudental, pelvic, hypogastric, vagus, and intercostal) which form a six separate pathway system. If there are six pathway systems in the female body that contribute to the triggering of an orgasm or expanded orgasms; then, there can be **63 distinct orgasm patterns** in females.

What is Different in ESR Women Compared to NESR Women?

A minority of human females experience **Expanded Sexual Response (ESR)**; however, **ESR** is a learned and developed phenomenon. Our estimation today is that only 10-15 % of woman population can experience **ESR** orgasms (the actual number can be even lower!), however this number and proportion may increase by means of education, learning, Tantra workshops, developing PC-Muscles (**PFM**), training, increasing interests in sexuality. In some **ESR** women there may be some anatomical and physiological differences in the individual genital system and/or in the neurophysiological systems and individual psychology, as well as hormonal system. It is our estimation is that the *growth hormone (GH)*, *oxytocin*, *testosterone*, *DHEA*, *thyroid hormones (T3 and T4)*, *estrogen and progesterone levels* in the bloodstream and the cerebrospinal fluids of these **ESR women** may be altered or elevated for some (there is no substantial data). However we know that some of the sexual responses are altered in **ESR** women:

- 1) They have the ability to be aroused more easily.
- 2) They have a heightened and elevated libido.
- 3) They are very conscious and responsive of **G-Spot**, **DVZ** and other erogenous zones other than **glans clitoris**. Their sexual stimuli arousal thresholds are de-

creased in response to vibrators (50-200 Hz), coitus, oral sex, manual stimulation and/or other methods such as fondling, touching, labial stimuli.

4) They spend more time in sexual issues and matters.

5) They have more fantasies and more tendencies to have sexual variations, from soft variations to extreme paraphilia and/or BDSM. Many hyper-active women we interviewed had many different fantasy patterns from soft to wild and extreme, although they never experienced any of them.

6) They generally use sex toys and vibrators.

7) They masturbate more frequently even in the presence of a partner. Their masturbation frequency increases when they don't have a partner.

8) Their sexual-brain and sexual-psychology is more developed and responsive. Some may experience "**brain orgasms**" just by fantasizing and using **PFM**.

9) They are less inhibited, more provocative and promiscuous. They are very permissive and liberated. Their mind is more open to sexual matters and novelties.

10) They are more experienced in sex, having more partners and longer sexual relations. However partner number is not an issue, as many of them pointed out. The quality of the relationship and of sex is more important than the quantity. They are **NOT** women in search of new partners every night, for one night stands; however they prefer long term and satisfactory relationships.

11) Their imagination, IQ and EQ (emotional intelligence) seem to be higher and more developed. They prefer to be in deeper and soul-mate type relations with men rather than superficial ones.

12) **ESR** women seem to be fewer believers in terms of traditional religious



practices compared to **NESR** women, while they have little or none, cultural and religious dogmas.

13) Some **ESR** women report to have ejaculation during orgasm like male, a phenomenon which had been reported by Ladas, Perry and Whipple (Ladas, 1982).

14) **ESR** women experience Altered States of Consciousness (**ASC**) during prolonged orgasm more frequently than **NESR** women. The number of variation of different subjective feelings and **ASC** of **ESR** women during different forms of orgasms and prolonged **ESR** orgasms is much higher compared to **NESR** women (Taylor, 2000; Sayin, 2011; King, 2010).

15) **ESR** women have happier, content, satisfactory sex life styles compared to **NESR** women. No **ESR** women goes to a clinical psychologist or psychiatrist for any sexual dysfunction complaint, so that is why the existence of **ESR** phenomenon and **ESR** women have not been pinpointed and discussed in the medical literature and psychiatry literature much.

16) **ESR** women may experience very long, multiple, prolonged and sustained orgasm patterns and also a phenomenon called *status orgasmus*, which may last from 1-2 minutes to 10-15 minutes or more (Sayin, 2010, 2011, 2012; Taylor, 2002; Schwartz, 1999).

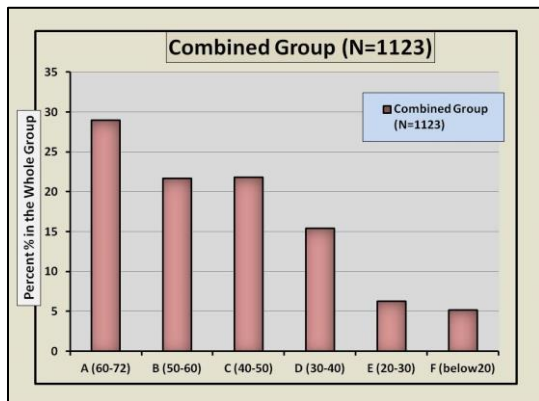
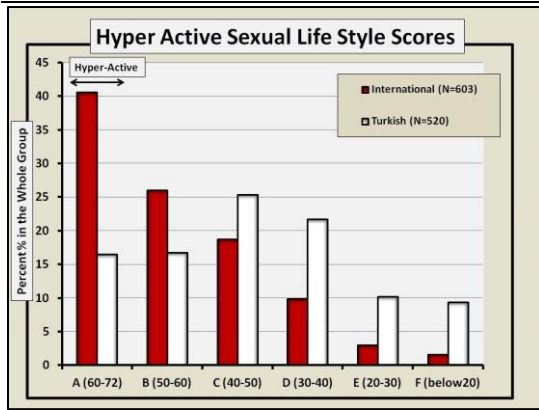
Some Aspects for DSM-V-2013 HDSI Criteria Related with ESR Phenomenon

The findings of some international surveys of Winters et al. (Winters, 2010) and ours (Kocatürk and Sayin, 2012), have shown that from 21.5 to 29 % of women may have a hyper-active sexual life style on the globe. This ratio is variable from society to society, from country to country, even from city to city.

Even though the selection of the study groups above can be questioned and criti-

cized, it was obvious that *some women with sexually hyper-active life styles exist on the globe*. In our study, the ratio of women who got the highest scores, which gave a clue about hyper active sex life styles, between 60-72 (group A) were 40.6 % internationally (N=605) and 16.5 % nationally (Turkish, N=520); combined ratio of the highest scores (group A) of the whole group studied (N=1123) was 29 %. Group A (scores between 60-72) was depicting the most hyper active sexual life styles, while group F (below 20) was the lowest sex life score. It would be *too biased* to claim that most of these women had some psychological disorders or pathologies such as, bipolar disorder, persistent genital arousal syndrome, being sexually compulsive etc. If **HDSI criteria** of DSM-V were applied to these women, 21.5 to 29 % of them would also get high scores in **HDSI** of DSM-V, to be misdiagnosed as **hypersexual disorder (HD)**. This data was presented in NACS-2011-Oslo (partially) and IASR-2012-Lisbon Meeting.

Also, in **HDSI** criteria more than 9 orgasms a week, will be regarded as a sign of hypersexual disorder (Kafka, 2010), which is a *very poor scientific conclusion*, because 67.6 % of American women experience multiple orgasms, and 65.9 % of American women experience 2 to 5 orgasms occasionally, while 19.3 % of American women experience 5-11 (or more) orgasms generally, during one love making session (Wolfe, 1982).



Also 7.9 % of American women have sexual intercourse every day, 35.6 % of them make love 3-5 times a week (Wolfe, 1982). A mathematical model would prove that nearly 30-35 % of American women are experiencing more than 9 orgasms a week.

The sexual tendencies and sexual life styles of global women and Turkish women were totally different, Turkish women getting an average of lower scores would mean that scales and scores for sexuality may vary from society to society. *Turkish women seem to have a less active, less satisfactory, less liberated, less permissive and less happy sexual life styles compared to the women globally!* (Kocatürk, 2011, 2012, İstanbul Report-2012) A woman, who is accepted to have a hyper active sex life style in Turkey, would be regarded as a normal and below average woman in USA or Scandinavia. Thus without performing the global surveys which would give the average sex life styles and tendencies (e.g. Orgasm

number in one week, fantasy duration, masturbation frequency, multiple orgasm capability) in each society, efforts to derive “*universal scores and scales*”, such as HDSI of DSM-V, are beyond the limits of *sanity, pure logical thinking and scientific reasoning*.

Although defined recently, a phenomenon coined as **Expanded Sexual Response (ESR)** exists in the human female. ESR is believed to be experienced by a minority of women, while approximately, estimated 10-15 % of global women can learn and develop ESR. The **ESR-women**, most of who are psychologically very normal and having no psychiatric problems can easily be misdiagnosed as HD, if the **HDSI criteria** of DSM-V are legalized. Such orgasmic responses of females are well known and published in some Eastern cultures, India, Tantric cultures and China for many centuries.

Moser criticizes HDSI criteria as (Moser, 2011) “... *In summary, the proposed Hypersexual Disorder diagnosis is based upon faulty and inconsistent logic, imprecise criteria, historical inaccuracies, and poorly conceived constructs. Inexplicably, the empirical basis required for adding a new diagnosis to the DSM is lacking. Using Kafka’s own analysis and research, the proposed diagnostic criteria for Hypersexual Disorder have not met his own description of the disorder or defined a new disorder. Hypersexual Disorder is another failed attempt at defining this phenomenon and obviously not ready for inclusion in DSM-V. This proposal is another example of the quasi-scientific muddled thinking that has characterized this concept historically....*” We totally agree with Dr. Charles Moser. More research should be performed on female sexual behavior to determine the “*normal and limits*” of women, before deriving certain pathological conclusions, such as **HD**, depending on ambiguous scales or inventories. Psychiatric associations or similar



foundations, - *as once the Church did!*- should not take such vanguarding roles to police the limits and boundaries of private and sexual lives of women, of whose sexual potentials are not YET unraveled , unveiled and revealed totally !

Conclusion

ESR induced orgasms have been defined recently in the medical literature (Taylor, 2000; King, 2010; Sayin, 1993, 2003, 2010, 2011, 2012). More emphasis should be given to an extended and further research on ESR and ESR induced prolonged female orgasms to understand the neuroanatomical, neurochemical and psychological mechanisms of ESR to unveil female orgasmic response. The researchers on sexology are welcome to join the ongoing ESR research, we are continuing to investigate.

Acknowledgements: We thank Prof. Osmo Kontula for his generous support.

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