"SEXUAL DYSFUNCTION AMONG FEMALES RECEIVING PSYCHOTROPIC MEDICATION - A HOSPITAL BASED CROSS SECTIONAL STUDY"

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ASEX	Arizona Sexual Experiences Scale
BDI	Beck Depression Inventory
BP	Blood Pressure
BPAD	Bipolar affective disorder
BZD	Benzodiazepines
CGI	Clinical Global Impression
DSM- IV-TR	Diagnostic and Statistical Manual of Mental Disorders 4th Edition
EPS	Extra Pyramidal Symptoms
FSD	Female Sexual Dysfunction
FSAD	Female Sexual Arousal Disorder
FSFI	Female Sexual Function Index
FGA	First Generation Antipsychotics
FOD	Female Orgasmic Disorder
GPE	General physical examination
5-HT	5-Hydroxytryptamine (Serotonin)
HSDD	Hypoactive Sexual Desire Disorder
ICD-10 DCR	International Classification of Diseases 10thedition-Diagnostic criteria

	for research
MAOIs	Monoamine Oxidase Inhibitors
NOS	Not Otherwise Specified
OCD	Obsessive Compulsive Disorder
PMT	Pre Menstrual Tension
PR	Pulse Rate
RR	Respiratory Rate
SAI	State trait Anxiety Inventory
SAD	Sexual Aversion Disorder
SD	Sexual Dysfunction
SNRIs	Selective Serotonin Nor Epinephrine Reuptake Inhibitors
SSRIs	Selective Serotonin Reuptake Inhibitors
SPSS	Statistical Package for Social Sciences
TCA	Tricyclic Antidepressants
VIP	Vasoactive Intestinal Polypeptide

ABSTRACT

Background: Sexual dysfunction is a known adverse effect of psychotropic medications. The prevalence of SD among patients treated with conventional antipsychotics range from 30% to 93% in women. Eventhough, sexual difficulties are common among women, very few studies have been done till date.

Objective: To study the prevalence and nature of SD among females receiving psychotropic medications and compare the SD among female patients receiving antipsychotics and antidepressants.

Methodology: A married female investigator conducted a hospital based cross sectional study on female patients visiting the psychiatry outpatient department. Patients who met the inclusion and exclusion criteria were included. The patients were assessed for sexual dysfunction disorder as per DSM-IV- TR. The severity of SD was measured using FSFI scale. Data were analyzed using SPSS version 17.

Results: The prevalence of SD in the current study was 68.32%.There was more than one SD in 48(47.52%). FSFI score was significantly low in patients with SD as compared to patients not having SD (p=0.001). SD was more common in patients who were on combination of antidepressants and benzodiazepines than antidepressant alone or antipsychotic alone.

Conclusion: SD was prevalent in more than half of the female patients who were on psychotropic drugs. Number of patients on individual psychotropic drugs was so small that a definite conclusion could not be drawn. However the study does emphasize the

need to carry out similar study on larger number of patients to get better insight into this problem.

Key words: Sexual dysfunction, Psychotropic drugs, Antidepressants, Antipsychotics

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INTRODUCTION

Sexual dysfunctions are not easily disclosed by the people due to various reasons. It is largely unreported or underreported. In India, due to the male dominated society and tradition of less openness it is very challenging for a woman to discuss problems she faces in her day to day sexual functioning. However, a review article by Baldwin et al reports that sexual dysfunction (SD) in women attending outpatient department is between 19-50%.[1] Eventhough sexual difficulties are common among women, very few studies have been done till date due to nascent nature of the area of study.[2] There is no study on pubmed search till 30-09-11 which has tried to understand the problem of SD among the Indian women. Surveys of patients attending London general practioners offices suggest that each year, family practitioners see several women or couples who present with sexual problems and even more if the physician inquires about patients' sexual health.[3]

The SD can be due to general medical illness or gynecological illness or psychological illness, or due to use of various medications.[4,5] According to DSM-IV-TR SD in women are based on the first three phases of sexual response cycle and include hypoactive sexual desire disorder (HSDD), sexual aversion disorder (SAD) involving dysfunctions of sexual desire, female sexual arousal disorder (FSAD) involving dysfunctions of excitement and female orgasmic disorder (FOD) involving dysfunctions of orgasm. There are also sexual pain disorders: dyspareunia and vaginismus.[6] Most of the previous studies showed that there is a relationship between the SD among the female patients and psychotropic medication.[7]

SD is a known adverse effect of antipsychotics.[8] The prevalence of SD among patients treated with conventional antipsychotics ranged from 30% to 93% in

women.[9] Review article published in 2007 by Higgins A found that among the antipsychotics, typical antipsychotics such as flupenthixol, fluphenazine, haloperidol, zuclopenthixol, thioridazine, trifluoperazine and pimozide have sexual side effects because of their effect on prolactin levels. Even the new atypical antipsychotics such as olanzapine, quetiapine, ziprasidone and clozapine also cause the SD among women.[10, 11] The degree of SD caused varies depending on the type of antipsychotic drug used. Kim KS et al[12] in their article mention that risperidone is reported to produce a similar incidence of sexual side effects to haloperidol.

Very few studies have examined SD in patients taking tricyclic antidepressants (TCAs) or monoamine oxidase inhibitors (MAOIs).[13] There are numerous case reports of disturbances of libido, arousal, and orgasm in men and women taking TCAs and MAOIs, but establishing a causal relationship is difficult.[14,15] The incidence of SD differs with different antidepressants.[16] The overall incidence of SD was 59.1% when multiple antidepressants were considered.[17]

The incidence of SD seemed to be more when benzodiazepines were used in combination with lithium.[18, 19]

There are very few studies on use of psychotropic drugs and SD in females. Not a single study from India was found on this topic in the literature. Indian culture and tradition discourages patients to discuss SD. With this background the current study was planned. This study is an attempt to understand the relationship between the use of psychotropic medications by female patients attending psychiatry out-patient department and SD reported by them if any.

OBJECTIVES

1. To know the prevalence of SD among females receiving psychotropic medications.
2. To study the nature of SD.
3. To compare the SD among female patients receiving antipsychotics and antidepressants.

REVIEW OF LITERATURE

Anatomy of the female reproductive system:

Female reproductive organs include external and internal genital organs. The female external genitalia extend from front of the pubis to perineal body. The female external genital organs include mons pubis, labia majora, labia minora, clitoris, vestibule of the vagina, bulbs of the vestibule and greater vestibular glands. The internal genitalia include the ovaries, fallopian tubes, uterus and vagina.[1]

Human sexual response:

In humans, the sexual functions have been extensively encephalized and conditioned by social and psychic factors. There is a sequence of physiological and emotional changes experienced by both males and females before, during and after sexual intercourse. Female sexual response is divided into four stages; excitement, plateau, orgasm and resolution.[20]

Female sexual response cycle:

The details of female sexual response cycle and various physiological changes which occur during sexual response are described in the Table on next page.

Table: Female sexual response cycle

Organ	Excitement Phase	Orgasmic Phase	Resolution Phase
	Lasts several minutes to several hours; Heightened excitement before orgasm - 30 seconds to 3 minutes	3-15 seconds	10-15 minutes; if no orgasm, 1/2 to 1 day
Skin	Just before orgasm: sexual flush inconsistently appears; maculopapular rash originates on abdomen and spreads to anterior chest wall, face, and neck; can include shoulders and forearms	Well developed flush	Flush disappears in reverse order of appearance; inconsistently appearing film of perspiration on soles of the feet and palms of hands
Breasts	Nipple erection in two thirds of women, venous congestion and areolar enlargement; size increases to one fourth over normal	Breasts may become tremulous	Return to normal in about 30 minutes
Clitoris	Enlargement in diameter of glands and shaft; just before orgasm, shaft retracts into prepuce	No change	Shaft returns to normal position in 5-10 seconds; detumesence in 5-30 minutes; if no orgasm, detumesence takes several hours
Labia majora	Nullipara: elevate and flatten against perineum Multipara: congestion and edema	No change	Nullipara : decrease to normal size in 1to 2 minutes Multipara: decrease to normal size in 10-15 minutes
Labia minora	Size increased two to three times over normal; change to pink, red, deep red before orgasm	Contraction of proximal labia minora	Return to normal within 5 minutes
Vagina	Colour change to dark purple; vaginal transudate appears 10 to 30 seconds after arousal; elongation and ballooning of vagina; lower third of vagina constricts before orgasm	3-15 contractions of lower third of vagina at intervals of 0.8 second	Ejaculate forms seminal pool in upper two thirds of vagina; congestion disappears in seconds or, if no orgasm, in 20 to 30 minutes
Uterus	Ascends into false pelvis; labor-like contractions begin in heightened excitement just before orgasm	Contractions throughout orgasm	Contractions cease, and uterus descends to normal position
Other	Myotonia A few drops of mucoid secretion from Bartholin's glands during heightened excitement Cervix swells slightly and is passively elevated with uterus	Loss of voluntary muscular control Rectum: rhythmical contractions of sphincter Hyperventilation and tachycardia	Return to baseline status in seconds to minutes Cervix colour and size return to normal, and cervix descends into seminal pool

Neurobiology of Sexual Behavior:

The neurobiology of sexual behavior involves sex steroids, neurotransmitters and their central nervous system effects and peripheral effects in the genitalia. Many neurotransmitters and hormones are thought to play a role in maintaining normal sexual function, although their precise actions are not fully understood. They include dopamine, noradrenaline, serotonin (5-HT), acetylcholine, gamma aminobutyric acid, oxytocin, nitric oxide, arg-vasopressin, angiotensin II, gonadotropin releasing hormone, substance p, neuropeptide y and cholecystokinin.[1] In women, estrogen appears to be important in desire, but is particularly important in arousal, as declining levels of estrogen associated with the menopausal transition and postmenopausal state may lead to vaginal atrophy and subsequent difficulty with vasocongestion and lubrication. Testosterone appears to be the primary sex steroid influencing desire and may involve initiation of sexual activity, while progesterone may mediate receptivity to partner approach. However, attempts to relate circulating levels of testosterone to sexual desire have yielded inconsistent results.[21] Testosterone function may, at least in part, be modulated by the neurotransmitters dopamine and serotonin through the hypothalamus and associated limbic structures. The decreased levels of bioavailable testosterone may lead to symptoms consistent with androgen insufficiency manifested as a diminished sense of well-being or dysphoric mood, persistent and unexplained fatigue and sexual function changes, including diminished libido, reduced sexual receptivity and diminished sexual pleasure.[22] Prolactin also influences the sexual excitement phase with increasing levels of prolactin having a negative effect on arousal and subsequent phases of sexual functioning. Oxytocin appears to be related to changes across the menstrual cycle, possibly enhancing sexual receptivity[23] and is associated with perineal contractions and increased systolic blood pressure at the time

of orgasm.[24] Neurotransmitters associated with central effects on sexual functioning include dopamine and norepinephrine. Dopamine appears to enhance sexual desire and the subjective sense of excitement and wish to continue in sexual activity once sexual stimulation has been initiated. Norepinephrine is also involved centrally in the arousal phase[25] and the effects of dopamine[26] and norepinephrine on sexual functioning can both be diminished by increasing serotonergic neurotransmission.[27] Peripheral effects on sexual functioning appeared to be even more complicated. Estrogen, testosterone and progestin released by the ovaries or the adrenals maintain genital structure and their function.[28] They also influence bioavailability and function of each other. Vasocongestion of clitoral tissue appears to be positively mediated by nitric oxide and vasoactive intestinal polypeptide (VIP) once sexual stimulation occurs.[29, 30]

The presence of adequate levels of estrogen and bioavailable testosterone appears to be required for nitric oxide to initiate vasocongestion with sexual stimulation.[31,32] Estrogen also influences nerve transmission and sensory thresholds.[33] Cholinergic fibers innervate vascular smooth muscle in the vagina and may be associated with vaginal engorgement during sexual arousal.[34] In peripheral tissues, serotonin appears to play a role in the initiation of sexual arousal by way of effects on vascular tone and blood flow and potentially on orgasm by facilitating uterine contractions. Serotonin may also interfere with both of these phases via effects on sensation, reduced adrenergic effects, inhibiting nitric oxide synthase and inhibition of orgasm by stimulation of 5-HT2 receptors.[35]

The neurotransmitters dopamine, serotonin and nitric oxide may have the most important roles in the pathophysiology and treatment of SD arising from antidepressant and antipsychotic drugs.[36] Increased levels of central dopamine can

increase sexual arousal and enhance penile erection. Dopamine antagonists, such as most antipsychotics can reduce sexual performance both directly and indirectly through inducing hyperprolactinemia.[25] The table below provides the central and peripheral effects of various hormones and neurotransmitters. [37]

Table: Central and peripheral effects of hormone or neurotransmitter

Hormone or Neurotransmitter	Sexual functioning attributes affected	Effects
Dopamine	Arousal, desire	Positive
Nitric oxide	Vasocongestion of clitoral tissue	Positive
Oxytocin	Orgasm, receptivity	Positive
Estrogen	Desire, arousal	Positive
Norepinephrine	Arousal	Positive
Testosterone	Sexual activity initiation, desire	Positive
Prolactin	Arousal	Negative
Vasoactive intestinal peptide	Vasocongestion of clitoral tissue	Positive and negative
Progesterone	Receptivity	Positive

Sexual dysfunction in females:

In the text revision of 4th edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) [6] SDs are categorized as AXIS 1 disorders. The syndromes listed are correlated with the sexual physiological response, which is divided into the four following phases.

1. Desire: Typically this consists of fantasies about and the desire to have sexual activity.

2. Excitement: A subjective sense of sexual pleasure and accompanying physiological changes, namely vaginal lubrication and expansion in women.

3. Orgasm: This is when sexual pleasure peaks with release of sexual tension and rhythmic contraction of the perineal muscles and reproductive organs. In women, contractions of the outer third of the vaginal wall occur.

4. Resolution: A sense of muscular relaxation and general well-being. Men are physiologically refractory to erection and orgasm, whereas women may respond to further stimulation.

Table: DSM-IV-TR phases of the sexual response cycle and the associated SD

Phases	Characteristics	Dysfunction
Desire	Distinct from any identified solely through physiology and reflects the patient's motivations, drives, & personality; characterized by sexual fantasies and the desire to have sex	Hypoactive sexual desire disorder; Sexual aversion disorder; Hypoactive sexual desire disorder due to a general medical condition (male or female); substance induced SD with impaired desire
Excitement	Subjective sense of sexual pleasure and accompanying physiological changes; all physiological responses noted in Masters and Johnson's excitement & plateau phases are combined in this phase	Female sexual arousal disorder; male erectile disorder; male erectile disorder due to general medical condition; dyspareunia due to general medical condition (male or female); substance induced SD with impaired arousal
Orgasm	Peaking of sexual pleasure, with release of sexual tension and rhythmic contractions of perineal muscles & pelvic reproductive organs	Female orgasmic disorder; male orgasmic disorder; premature ejaculation; other SD due to general medical condition (male or female); substance induced SD with impaired orgasm
Resolution	A sense of general relaxation, well being, and muscle relaxation; men are refractory to orgasm for a period of time that increases with age; whereas women can have multiple orgasms without a refractory period	Post coital dysphoria; post coital headache.

Epidemiology of SD:

Laumann EO, et al[38] reported that the SD among women is quite common and it may be experienced by more than 40% of the women in general population. In a study by Frank et al the prevalence of various specific SDs in American population were described as shown in the table below.[4]

Table: Prevalence of sexual dysfunctions among females as per DSM-IV-TR

DSM-IV-TR SEXUAL DYSFUNCTION DISORDER		PREVALENCE
Sexual desire disorder	Hypoactive sexual desire disorder	10 - 46%
	Sexual aversion disorder	Rare
Female sexual arousal disorder		6-21%
Female orgasmic disorder		4-7%(general population)
		5-42%(primary care setting)
Sexual pain disorders	Dyspareunia	3-18%(general population)
		3-46%(primary care setting)
		9-21%(postmenopausal women)
	Vaginismus	0.5-1 %(general population)
		Up to 30 %(primary care setting)

The same article states that sexual dysfunctions are diagnosed only when they are a major part of the clinical picture. They can be lifelong or acquired, generalized or situational and may be due to psychological factors, physiological factors or combined factors. As noted above SD can be caused secondary to general medical illness, gynecological illness, psychological illness or due to administration of various drugs. Various causes of SD in females are described below.[4]

Table: Causes for female sexual dysfunction

CAUSE	EXAMPLES
A. Hormonal/endocrine	Hypothalamic-pituitary axis dysfunction Menopause, Chronic oral contraceptive use, Premature ovarian failure
B. Musculogenic	Hyper-or hypotonicity of pelvic floor muscles
C.Neurogenic	Spinal cord injury, Disorders of the central or peripheral nervous system
D. Psychogenic	Psychotropic medications ,Poor body image, Decreased self-esteem, Mood disorders
E. Vasculogenic	Atherosclerosis, Trauma, Hormonal influences

Segraves RT and Balon R[39] in 2009 reported that estimates of SD among women due to psychotropic medications vary, ranging from small percentages less than 5% to more than 80% depending on the category of the medication being administered. The precise frequency is not known and the issue is made more complex by the fact that some studies report incidence (the number of new cases in a given population during a specified period) and some report prevalence (the number of existing cases in a given population during a specified period or at one time point). In general, the impediments listed by Montgomery and colleagues[17] in establishing the occurrence of SD due to antidepressant medications are the usual obstacles

encountered in establishing the exact prevalence of SD due to psychotropic medications. These reasons are listed below:

1. The data on the prevalence of SD in the general population are themselves scarce, which makes it difficult to establish a "normal" baseline.
2. Patients with various mental disorders have an elevated risk of SD because of the effect of the illness on relationships and behavior.
3. Human sexual behavior is subject to social and cultural influences, which may vary with time, place, ethnic group, social class, and so on.
4. Data on sexual behavior are prone to underreporting; spontaneous reporting by patients and direct questioning by physicians have been reported to differ by as much as 60%.
5. The majority of studies on SD associated with antidepressants have methodological flaws, such as failure to use validated rating scales, a baseline assessment, a placebo group, randomization or blinding.[17]

It addition it is also a fact that most studies do not take into account coexisting factors, such as comorbidity with other mental disorders (e.g., major depression and anxiety disorders), comorbid substance abuse, comorbid physical illness and treatment with other medications that may cause SD (e.g., cardiovascular medications). Despite these limitations, from the available studies it may be inferred that incidence of SD among female patients taking psychotropic medication, is higher than its rate of occurrence found among females in general population.

In the following section the description of FSD due to various classes of psychotropic medication is provided.

Antipsychotics:

The antipsychotics are commonly used in treating psychoses - schizophrenia, affective psychoses and other psychoses. Among antipsychotics there are typical antipsychotics also known as traditional neuroleptics or first generation antipsychotics (FGAs). The medications such as chlorpromazine, haloperidol, thioridazine and trifluperazine belong to this category of typical antipsychotics. The other category of antipsychotic medications is called atypical antipsychotics. The medications such as clozapine, risperidone, olanzapine, ziprasidone, quetiapine and aripiprazole are said to belong to the category of atypical antipsychotics.

The typical set of SDs caused by antipsychotics among women is as below.[40, 41,42]

1. Anovulation
2. Infertility
3. Amenorrhea
4. Decreased libido

Typical antipsychotics are thought to provide the therapeutic effect by blocking the (D2) dopamine receptors leading to decrease in the positive symptoms of psychosis. It has been established through various studies that D2 blockade in turn leads to EPS (extra pyramidal symptoms) and hyperprolactinemia.[41] This could be one of the significant reasons for FSD as it has been found through studies that

1. Study by Knegtering R and Moolen A[43] reported that around 40% of emerging sexual side effects in patients with schizophrenia were attributable to the prolactin-raising properties of antipsychotics.
2. When depression and dose of medication were controlled among the female patients, the relationship between prolactin and SD in females strengthened.

Based on these findings it has been hypothesized that hyperprolactinemia is the main cause of SD among female patients on conventional psychotropic medication. In addition as Kelly and Conley[44] pointed out, other factors, such as cholinergic antagonism, alpha-adrenergic blockade, serotonin activity, extrapyramidal side effects, tardive dyskinesia, and nonspecific effects such as sedation and weight gain (histamine receptors), may also play a significant role.

In a study by Smith SM et al[45] the prevalence of SD in groups treated with typical antipsychotics is thought to be 30–93% in women, with thioridazine being one of the worst culprit. The study also reported that patients taking conventional antipsychotic medication found that for female patients there was no correlation between age and SD. Dose of medication was associated with reduced physical arousal ($r = 0.36$, $P = 0.05$). Depression was significantly correlated with poor libido ($r = 0.41$, $P = 0.03$), reduced physical arousal ($r = 0.59$, $P = 0.001$) and orgasmic problems ($r = 0.648$, $P < 0.001$). Prolactin correlated negatively with libido ($r = -0.46$, $P = 0.03$) and physical arousal problems such as poor vaginal response ($r = 0.52$, $P = 0.02$). Controlling for dose of medication reduced the significance of the association between prolactin and libido ($r = -0.46$, $P = 0.06$), as did controlling for depression ($r = -0.37$, $P = 0.17$). However, the association between prolactin and poor vaginal response was strengthened by controlling for dose of medication ($r = 0.6$, $P = 0.011$) and for depression ($r = 0.62$, $P = 0.014$). Even though the newer atypical antipsychotic agents also cause the SD in females similar to the ones observed in female patients taking the typical antipsychotics, these newer atypical antipsychotics seem to cause fewer sexual side effects and offer the possibility to improve quality of life for patients together with potential improvements in patient compliance.[44] However, very few studies have been published on specific investigations of the effects of atypical antipsychotics on

female sexual function.[46] Atypical antipsychotics have a number of potential advantages over standard typical agents with respect to

1. Minimizing SD by having fewer EPS.
2. Receptor binding profiles that reduce the risk of sexual side effects through lower D2 occupancy.

Furthermore, atypical antipsychotics may: display greater 5-HT2A receptor affinity relative to D2 receptor affinity; have less effect on peripheral cholinergic and α-adrenergic receptors involved in sexual function; present a lower risk for elevation of plasma prolactin concentrations.[47]

Antidepressants:

As name suggests antidepressants are mainly used in treating depression. There are different categories of antidepressants such as Tricyclic Antidepressants (TCAs), Monoamine Oxidase Inhibitors (MAOIs), Selective Serotonin Reuptake Inhibitors (SSRIs) and Selective Serotonin Nor Epinephrine Reuptake Inhibitors (SNRIs). TCAs were the first category of antidepressants introduced during 1960s & 1970s.

Several studies, have found a high degree of correlation between the increase in SD among patients when they were being treated with antidepressants. Bahrick A and Harris M[48] suggested that women who are being treated with antidepressants report.

1. Delayed orgasm or anorgasmia
2. Difficulty with arousal
3. Lubrication problems
4. Decreased libido

These dysfunctions are caused as a side effect of the neurobiological action of the antidepressants. TCAs act by blocking the reuptake of serotonin (5-HT), norepinephrine (NE), acetylcholine (ACh) and histamine (H). MAOIs act by inhibiting monoamine oxidase thus reducing the rate at which biogenic amines are broken down, leading to the increase of concentration of amines such as norepinephrine, epinephrine, dopamine and serotonin in the body. SSRIs block the reuptake of serotonin leading to increased serotonin levels. SNRIs act by blocking the reuptake of serotonin (5-HT) and norepinephrine (NE).

Very few studies have examined SD in patients taking tricyclic antidepressants (TCAs) or (MAOIs). In a 6-week trial controlled study by Harrison et al[13] comparing imipramine (200–300 mg/day), phenelzine (60–90 mg/day) and placebo, delayed orgasm was reported in 21% of men and 27% of women taking imipramine, in 30% of men and 36% of women taking phenelzine and in 11% of women and no men taking placebo. There are numerous case reports of disturbances of libido, arousal and orgasm in men and women taking TCAs and MAOIs, but establishing a causal relationship is difficult.[14, 15] Clomipramine, the most serotonergic TCA, is associated with the greatest frequency of sexual side effects. Study by Monteiro W et al[49] reported that patients with obsessive-compulsive disorder on clomipramine, one-third of the patients spontaneously reported anorgasmia, whereas direct questioning revealed that 96% of the treated patients who had previously been able to reach orgasm became anorgasmic while taking clomipramine. Anorgasmia disappeared within 3 days of the discontinuation of clomipramine.

Even though there are many studies that have focused on the SD caused by SSRIs, there has been no consistency in the findings due to various contextual factors and method adopted to conduct the study.[50]

Most of the studies that are cited below have studied the effect of entire class of antidepressants rather than being focused on the side effects of only one category of antidepressants. The prospective Zurich cohort study[51] showed that the overall prevalence of sexual problems in subjects with depression (including major depression, dysthymia and recurrent brief depression) was about twice that in controls (50% and 24%). This difference encompassed emotional problems, SD and both decreased and increased libido. The study findings were from a group of young females (28–35 years old) and were not necessarily applicable to older age groups. The Zurich study also compares the prevalence of sexual problems in untreated patients and patients receiving either medication (50% benzodiazepines, 50% antidepressants) or psychotherapy. Sexual problems were more prevalent in the 78 (62%) patients who received treatment than in the 122(45%) who did not and both groups had a higher prevalence of SD than did the 326 controls (26%). No statistically significant differences were found in the prevalence of any form of SD between patients treated with medication or psychotherapy alone.[52]

In a study of SD caused by newer antidepressants conducted at Seoul by Lee KU et al[53] involving 101 patients (46 male and 55 female) being treated for depression, it was found that a substantial number of participants (46.5%, n=47) experienced SD. The prevalence of SD differed across drugs: citalopram 60% (n=12), venlafaxine 54.5% (n=12), paroxetine 54.2% (n=13), fluoxetine 46.2% (n=6) and mirtazapine 18.2% (n=4). Regression analyses revealed the significant factors for SD were being female, total scores on the BDI (Beck Depression Inventory) and SAI (State trait Anxiety Inventory) and type of antidepressant ($F=4.92$, $p<0.0001$). Of the antidepressants, the mirtarzapine group's total ASEX (Arizona Sexual Experiences Scale) score was significantly lower than the scores of the citalopram, fluoxetine, and

paroxetine groups. This study concluded that, the incidence of SD was substantially high during antidepressant treatment. The incidence of SD differed among antidepressants having different mechanisms of action.

Similarly the results of a multicentre, prospective, open-label study conducted by Montejo et al[16] included female as well as male subjects, reported that the incidence of SD among women (n=610) was as high as 56.9%. This study also indicated that the occurrence of SD in a patient in general deferred based on the specific type of antidepressant used in treatment and these rates were as follows: fluoxetine, 57.7% (161/279); sertraline, 62.9% (100/159); fluvoxamine, 62.3% (48/77); paroxetine, 70.7% (147/208); citalopram, 72.7% (48/66); venlafaxine, 67.3% (37/55); mirtazapine, 24.4% (12/49); nefazodone, 8% (4/50); amineptine, 6.9% (2/29); and moclobemide, 3.9% (1/26).

Non gender specific analysis results from the meta-analysis by Serretti A and Chiesa A[54] on SD related to antidepressants, indicated a significantly higher rate of total and specific treatment-emergent SD and specific phases of dysfunction compared with placebo for the following drugs in decreasing order of impact: sertraline, venlafaxine, citalopram, paroxetine, fluoxetine, imipramine, phenelzine, duloxetine, escitalopram and fluvoxamine, with SD ranging from 25.8% to 80.3% of patients. No significant difference with placebo was found for the following antidepressants: agomelatine, amineptine, bupropion, moclobemide, mirtazapine and nefazodone.

Mood Stabilizers and Anticonvulsants:

Mood stabilizers are used in the treatment of bipolar disorder. Drugs such as lithium, carbamazepine, lamotrigine, oxcarbazepine, topiramate, valproic acid are

classified under mood stabilizers. Most of the mood stabilizers except lithium are antiepileptic class of drugs. A study by Labbate LA[55] in 2008 reported that unless combined with other medications, lithium appears to have limited adverse sexual side effects. Most of the data on SD associated with antiepileptic drugs that are used as mood stabilizers comes from the epilepsy literature; the data on these drugs from bipolar disorder literature are either nonexistent or very limited. SD associated with lamotrigine and valproic acid is considered to be rare.

The mechanism of SD associated with mood stabilizers is probably multifactorial. These medications may combine effects on various neurotransmitters in the peripheral and central nervous systems, on metabolism of various hormones, and on sex hormone-binding globulin.

Interestingly, one study examined the effects of lithium alone, versus lithium in combination with benzodiazepines, on sexual function in individuals with bipolar disorder.[18] Of the 59 women in the sample, 75% reported no change in sexual function with the medications, 5% reported mild changes, 5% reported moderate changes and 15% reported 'great' changes. Of those who noted changes, the majority (40%) pertained to decreased sexual desire; decreased orgasmic ability (26%), decreased quality of orgasms (24%) and pain during orgasm (4%) were reported. The results comparing lithium alone to lithium plus benzodiazepines revealed a significant difference; while only 14% of patients solely on lithium reported negative sexual side effects, this number rose to 60% in the group taking lithium in combination with benzodiazepines. It has also been cited that, a more recent study failed to replicate these findings.[56] Furthermore, as there was no comparison group of women solely on benzodiazepines in the study by Ghadirian AM et al[18] no conclusions can be drawn

regarding any additive effects of lithium beyond those of benzodiazepine use on its own.

Carbamazepine induces metabolism of androgen and impacts other hormones, and thus is considered more prone to be associated with SD. The evidence of this association is weak. Long-term therapy with carbamazepine has been shown to increase serum hormone-binding globulin, decreasing free testosterone. Free testosterone is assumed to correlate with libido in both sexes and there is possibly a mechanism by which carbamazepine could decrease libido with long-term use.[2]

In summary, treatment using lithium does not seem to cause any SD in females. Carbamazepine and valproate may cause SDs in women to a limited extent.

Anxiolytics:

Medications usually used for treatment of anxiety and anxiety disorders include benzodiazepines, buspirone, various antidepressants and more recently antipsychotics. All benzodiazepines have occasionally been reported as being associated with SD. However, adequate literature is not available. Decreased libido and impaired arousal and orgasm have been reported with benzodiazepines.[55, 57] Most benzodiazepines seem to have a dose response relationship between the drug dose and sexual inhibition.[39] Whether an association exists between benzodiazepines and sexual disinhibition is unclear.

The mechanism of SD associated with benzodiazepines is not known but may involve gamma-amino butyric acid receptors in the midbrain central gray or ventral tegmental area. Buspirone is an anxiolytic that exerts its antianxiety effect through serotonin type 1A (5-HT1A). The estimate of frequency and the evaluation of SD associated with benzodiazepines are confounded by the association of SD with

anxiety and anxiety disorders. Buspirone is not found be associated with the SD and animal studies suggest that it may enhance both the desire and orgasm.[14]

MATERIALS AND METHODS

1. Source of data: Department of Psychiatry of KLES Dr. Prabhakar Kore Charitable Hospital and Medical Research Centre, Belgaum.

2. Method of collection of data:

- **Study design:** A cross sectional hospital based descriptive study
- **Ethical committee clearance:** Obtained
- **Sampling procedure**: All consecutive female patients attending psychiatry OPD and fulfilling the inclusion criteria were included in the sample for the study

3. Sample size: There is not a single study of similar nature from India. A review article by Baldwin et al[1] mentioned the prevalence of female SD ranges from (30 % to 93 %).There is no data from India on prevalence of female SD. Hence prevalence was taken as 50% for the sake of calculation of sample size. Therefore the sample of the study was determined as follows

$n=4pq/d^2$

Where p=50 (p=prevalence)

q=100-p

d=absolute error=10

n=4x50x50/100 =100 cases

4. Duration: One year three months (1st January 2010 to 30th April 2011)

5. Inclusion criteria:

- Married female patients between the ages of 18 yrs to 45yrs.
- Asymptomatic from current psychiatric illness for last one month.
- Patients who are on psychotropic medication.
- Patients who gave informed consent to be part of the study.

6. Exclusion criteria:

- Age <18 yrs and >45 yrs
- Unmarried, divorced, separated /(not living with their husbands) female patients
- Patients suffering from systemic illness which may cause SD **[**List of systemic illnesses causing SD enclosed in **Annexure I]** [58]
- Patients on commonly used non psychotropic drugs which are likely to cause SD [List of nonpsychotropic drugs causing SD is enclosed in **Annexure II]**[59]

7. Instruments / Tools:

- **CGI- (Clinical Global Impression) scale** with the scores ranging from 0-7 was used to assess the severity of illness. Female patients who scored between 1-3 were considered to be asymptomatic from the underlying psychiatric illness and were included in the study.**[Annexure III]**[60]
- **ICD-10 DCR (**International Classification of Diseases 10th edition diagnostic criteria for Research) [61] The ICD-10 DCR criteria were used to categorize the psychiatric diagnoses of the patients into three broad categories as psychosis, neurosis and mood disorders by the treating psychiatrist. It gives the correct psychiatric illness diagnosis of each patient.

- **DSM-IV-TR** (Diagnostic and Statistical Manual of Mental Disorders 4thEdition Text Revision) The DSM-IV-TR was used to categorize various types of SD in female patients. In ICD-10 DCR SDs are not discussed separately for male and female gender. DSM-IV-TR gives a detailed classification of SD in female gender based on human sexual response cycle. In order to find out the exact nature of SD among female patients DSM-IV-TR criteria were used in the current study. It is based on the first three phases of the sexual response cycle and includes hypoactive sexual desire disorder (HSDD), sexual aversion disorder (SAD) involving dysfunctions of sexual desire, female sexual arousal disorder (FSAD) involving dysfunctions of excitement and female orgasmic disorder (FOD) involving dysfunctions of orgasm. In addition there are also two sexual pain disorders, dyspareunia and vaginismus **[Annexure IV]**[6]
- **FSFI** (Female Sexual Function Index): A multidimensional self report instrument for the assessment of female sexual function which consists of 19-item questionnaire on various aspects of sexual functioning was administered to each patient. Each item was scored with values ranging from 0-5. It was used to assess the severity of sexual dysfunction after initial diagnosis using DSM-IV-TR criteria. The FSFI score with high cumulative value indicated that there is no SD and a score with low cumulative value indicated that SD is present. In this study this scale was used on two groups of patients those who had SD and in those who did not have SD **[Annexure V-A]**[62]

8. Procedure and statistical methods:

All female psychiatric patients who were attending the psychiatry outpatient department between1st January 2010 to 30th April 2011 were recruited for the study as

per the inclusion and exclusion criteria. Female patients included in the study were in remission and on continuous medications. The patients who did not have symptoms and who reported as improved were administered CGI scale. Based on the CGI score only the patients who were asymptomatic (CGI Score<3) and who were still on psychotropic medications were included in the study. All these patients were interviewed and informed consent **[Annexure VI]** was obtained from each patient. Initial psychiatric diagnosis was made by the treating consulting psychiatrist as per ICD-10 DCR criteria. The choice regarding the type and dosage of the drug was at the discretion of the consultant. The female investigator established the rapport and collected the information about present history details and socio demographic data by using the specially prepared proforma **[Annexure VII]**. Sociodemographic data included age, residential information, religion, education, occupation and socioeconomic status. Details of past history, family history, personal history, menstrual history and sexual history were collected. Each patient's general physical examination and systemic examination was done.

DSM-IV-TR was used to categorize the SD. Then the severity of SD was assessed using FSFI scale. The FSFI Scale was also translated in local language (kannada) and the information was gathered **[Annexure V-B]**. The data was analysed using SPSS version 17 software.

9. Statistical methods:

1. Data obtained was tabulated using version 17 of the Statistical Package for Social Sciences (SPSS, published SPSS Inc.) and subjected to appropriate statistical analysis.
2. Means, standard deviation and percentages were used to describe the sample.

3. Chi- square test, students ‘t’ test and ANOVA were used to identify differences between groups.
4. $P < 0.05$ was considered statistically significant

Statistical analysis of the data obtained gave idea of prevalence of SD in the sample studied. SD among patients using antidepressant drugs was compared with SD among patients using antipsychotic drugs. Results were tabulated and discussed.

RESULTS

Table No.1 CGI score N=101

Sl. No.	Variable	Mean	Standard Deviation
1	CGI Score	1.55	±0.62

Table No.2 Socio-demographic details N = 101

Sl. No.	Variable		Frequency / Mean	% / Standard Deviation
1	Age (in years)		33.03	± 6.98
2	Religion	Hindu	91	90.10%
		Muslim	9	8.91%
		Christian	1	0.99%
3	Occupation	Homemaker	90	89.11%
		Pvt.Employment	5	4.95%
		Govt.Employment	6	5.94%
4	Residence	Rural	48	47.52%
		Urban	53	52.48%

During the study period there were 101 asymptomatic female patients attending psychiatry OPD who were on psychotropic medications and who fulfilled inclusion and exclusion criteria. The mean CGI score for the sample was 1.55±0.62 as shown in Table No.1 indicating that the patients included in the study were in remission from the underlying psychiatric condition. Table no.2 revealed that the mean age of patients as 33.03±6.98 years. The demographic data of the patients

revealed by Table No.2 that there were 91 (90.10%) of the patients were of Hindu religion, 9 (8.91%) were Muslims and 1 (0.99%) was Christian. Ninety (89.10%) of the patients in the study were homemakers, 6 (5.94%) of them had government employment and 5 (4.95%) had private employment. The number of patients from urban and rural areas was 53 (52.50%) and 48 (47.50%) respectively.

Table No.3 Socio demographic details and SD N=101

Sl. No	Variable		Sexual Dysfunction		χ^2 / t value	p value
			Present N (%) / Mean±SD	Absent N (%) / Mean±SD		
1	Age (in years)		33.39±7.04	32.25±6.89	0.763	0.447
2	Religion	Hindu	63 (62.38%)	28 (27.72%)	1.176	0.555
		Muslim	5 (4.95%)	4 (3.96%)		
		Christian	1 (0.99%)	0(0%)		
3	Occupation	Homemaker	61(60.40%)	29(28.71%)	0.335	0.846
		Pvt. Employment	4(3.96%)	1(0.99%)		
		Govt. Employment	4(3.96%)	2(1.98%)		
4	Residence	Rural	30 (29.7%)	18 (17.8%)	1.430	0.232
		Urban	39 (38.6%)	14 (13.9%)		

Table No.3 showed the comparison of SD with the demographic variables. SD was present in the age group with a mean value of 33.39±7.04 and absent in patients with a mean value of 32.25±6.89.Among the 91 patients who were of Hindu religion, SD was present in 63(62.38%) and absent in 28(27.72%).Out of 9 Muslim patients 5(4.95%) had SD, and 1(0.99%) Christian patient had SD. Out of 90 homemakers 61(60.40%) of them had SD. Out of 5 patients who were privately employed 4(3.96%) of them had SD. Among 6 patients who had government employment

4(3.96%) of them had SD. Out of 48 patients who were from rural area 30(29.70%) had SD, and out of 53 patients from urban area 39(38.62%) had SD.

Table No.4 Menstrual history N=101

Sl. No.	Variable		Frequency	%
1	Premenstrual tension	Present	23	22.77%
		Absent	78	77.23%
2	Dysmenorrhoea	Present	27	26.73%
		Absent	74	73.27%
3	Menstrual cycle	Regular	87	86.14%
		Irregular	14	13.86%

Table No.5 SD and Menstrual history

N=101

Sl. No.	Variable	Status	Sexual Dysfunction Present	Sexual Dysfunction Absent	χ^2 / t value	p value
1	Premenstrual tension	Present	16 (15.84%)	7 (6.93%)	0.21	0.884
		Absent	53 (52.48%)	25 (24.75%)		
2	Dysmenorrhoea	Present	18 (17.82%)	9 (8.91%)	0.046	0.830
		Absent	51 (50.50%)	23 (22.77%)		
3	Menstrual cycle	Regular	59 (58.42%)	28 (27.72%)	0.073	0.787
		Irregular	10 (9.90%)	04 (3.96%)		

Table No.4 showed menstruation related difficulties. Premenstrual tension (PMT) was present in 23 (22.77%), dysmenorrhoea was present in 27 (26.73%), menstrual cycles were irregular in 14 (13.86%) and rest had regular cycles.

Table No.5 showed the comparison of menstrual difficulties with the SD. Out of 23 patients who had premenstrual tension 16(15.84%) of them had SD, whereas out of 78 patients who did not have premenstrual tension 53(52.48%) of them had SD. Among 27 patients who had dysmenorrhoea 18(17.82%) had SD and out of 74 of them who did not have dysmenorrhoea 51(50.50%) had SD. Out of eighty seven patients with regular menstrual cycles 59(58.4%) of them had SD. Out of 14 patients who had irregular menstrual cycles 10(9.90%) had SD and 4(13.86%) of them had no SD.

Table No.6 Details of duration of psychiatric illness N = 101

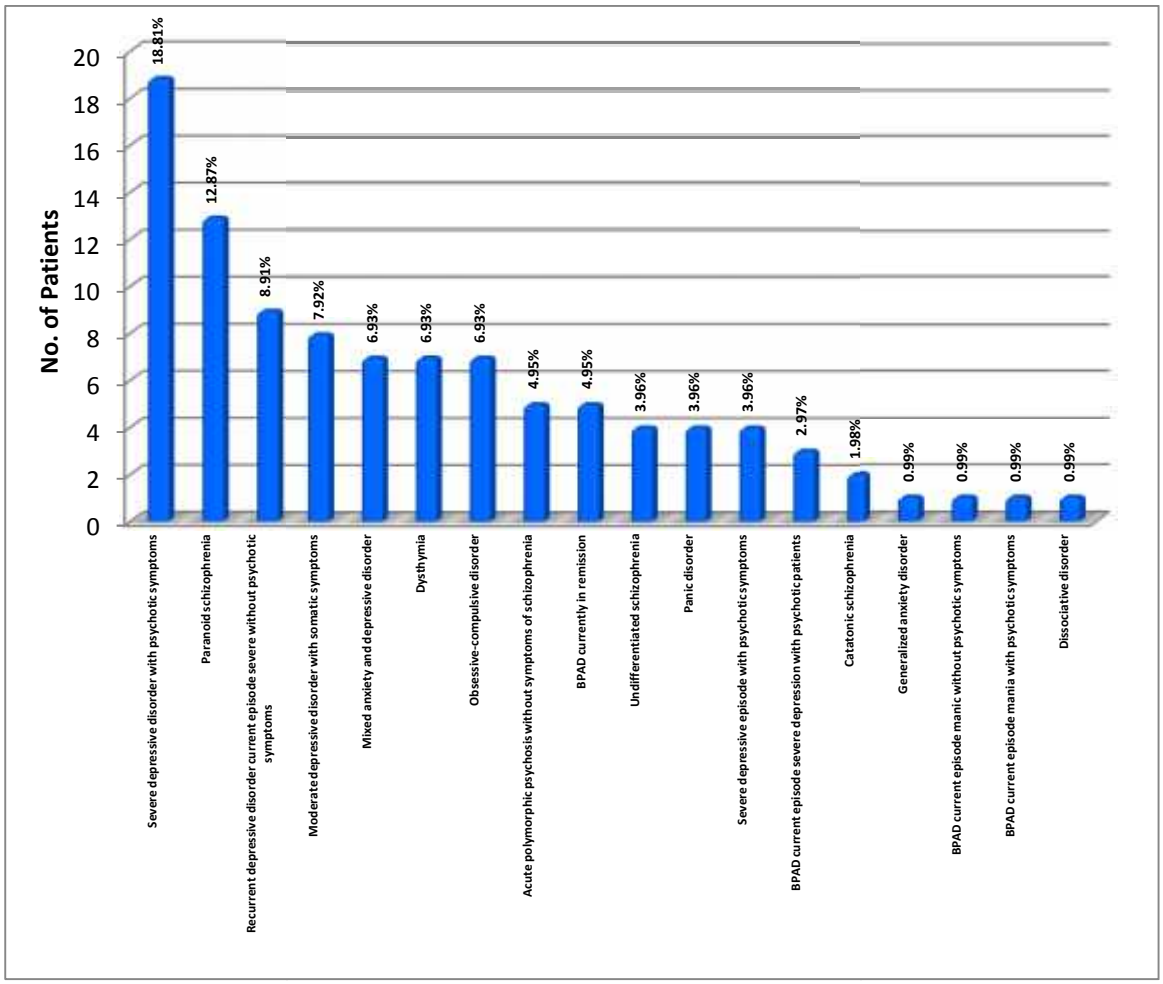
Sl.No.	Variable	Mean	Standard deviation
1	Duration of Psychiatric Illness (in years)	4.23	±3.85

Table No.6 showed on an average the patients included in the study had psychiatric illness for 4.23±3.85 years.

Table No.7 Details of psychiatric diagnosis N=101

Sl. No	Variable	Frequency / Mean	% / Standard deviation
1	Severe depressive disorder with psychotic symptoms	19	18.81%
2	Paranoid schizophrenia	13	12.87%
3	Recurrent depressive disorder current episode severe without psychotic symptoms	09	8.91%
4	Moderate depressive disorder with somatic symptoms	08	7.92%
5	Mixed anxiety and depressive disorder	07	6.93%
6	Dysthymia	07	6.93%
7	Obsessive-compulsive disorder	07	6.93%
8	Acute polymorphic psychosis without symptoms of schizophrenia	05	4.95%
9	BPAD currently in remission	05	4.95%
10	Undifferentiated schizophrenia	04	3.96%
11	Panic disorder	04	3.96%
12	Severe depressive episode with psychotic symptoms	04	3.96%
13	BPAD current episode severe depression with psychotic patients	03	2.97%
14	Catatonic schizophrenia	02	1.98%
15	Generalized anxiety disorder	01	0.99%
16	BPAD current episode manic without psychotic symptoms	01	0.99%
17	BPAD current episode mania with psychotic symptoms	01	0.99%
18	Dissociative disorder	01	0.99%

Bar Diagram No.1: Distribution of the patients as per the diagnosis based on ICD - 10 DCR



Patients were classified according to ICD-10 DCR Criteria as shown in Table No.7. Out of 101 patients as shown in bar diagram no. (1) nineteen (18.81%) of them were diagnosed as severe depressive episode with psychotic symptoms, 13(12.87%) paranoid schizophrenia, 9(8.91%) recurrent depressive disorder current episode severe without psychotic symptoms, 8(7.92%) moderate depressive episode without somatic symptoms,7(6.93%) mixed anxiety and depressive disorder,7(6.9%) dysthymia,7(6.93%), OCD 5(4.95%), acute polymorphic psychosis with symptoms of schizophrenia,5(4.95%) BPAD currently in remission, and rest of the cases were less than 5%.

Table No.8 Broad classification of psychiatric disorders N=101

Sl. No.	Variable		Frequency	%
1	Classification	Psychoses	24	23.76%
		Neuroses	20	19.80%
		Mood disorders	57	56.44%

Table No.9 SD and psychiatric disorders and their duration N=101

Sl. No.	Variable		Sexual dysfunction Present N(%) /(Mean±SD)	Sexual dysfunction Absent (N%) / (Mean±SD)	χ^2 / t value	p value
1	Duration of Psychiatric Illness (in years)		4.24±4.27	4.21±2.77	0.03	0.973
2	Classification	Psychosis	15(14.85%)	9(8.91%)	1.773	0.412
		Neurosis	12(11.88%)	8(7.92%)		
		Mood disorders	42(41.58%)	15(14.85%)		

Later patients were grouped broadly into psychosis, neurosis and mood disorders as shown in Table No.8. Among the people included in study 24 (23.76%) people were categorized under psychosis, 20 (19.80%) were categorized as neurosis and 57 (56.44%) were categorized as belonging to mood disorders.

Table No.9 showed the comparison of SD with classification of psychiatric disorders and its duration. SD was present in patients who had psychiatric illness for a

mean duration of 4.24±4.27 and SD was absent in patients for a mean duration of 4.21±2.77. Out of 24 patients with psychosis 15(14.85%) had SD. Among 20 patients of neurosis 12(11.88%) had SD. Out of 57 patients with mood disorders, 42(41.58%) had SD.

Table No.10 Single psychotropic drug used N=35

Sl. No.	Variable		Frequency	%
	Drugs			
1	Antidepressants (n = 17)	Tricyclics	10	9.90%
		SSRIs	5	4.95%
		SNRIs	2	1.98%
2	Antipsychotics (n = 15)	Atypicals	12	11.88%
		Typicals	3	2.97%
3	Mood stabilizers (n = 3)		03	2.97%

Bar Diagram No. 2: The number of patients treated with antidepressants, antipsychotics, or mood stabilizers

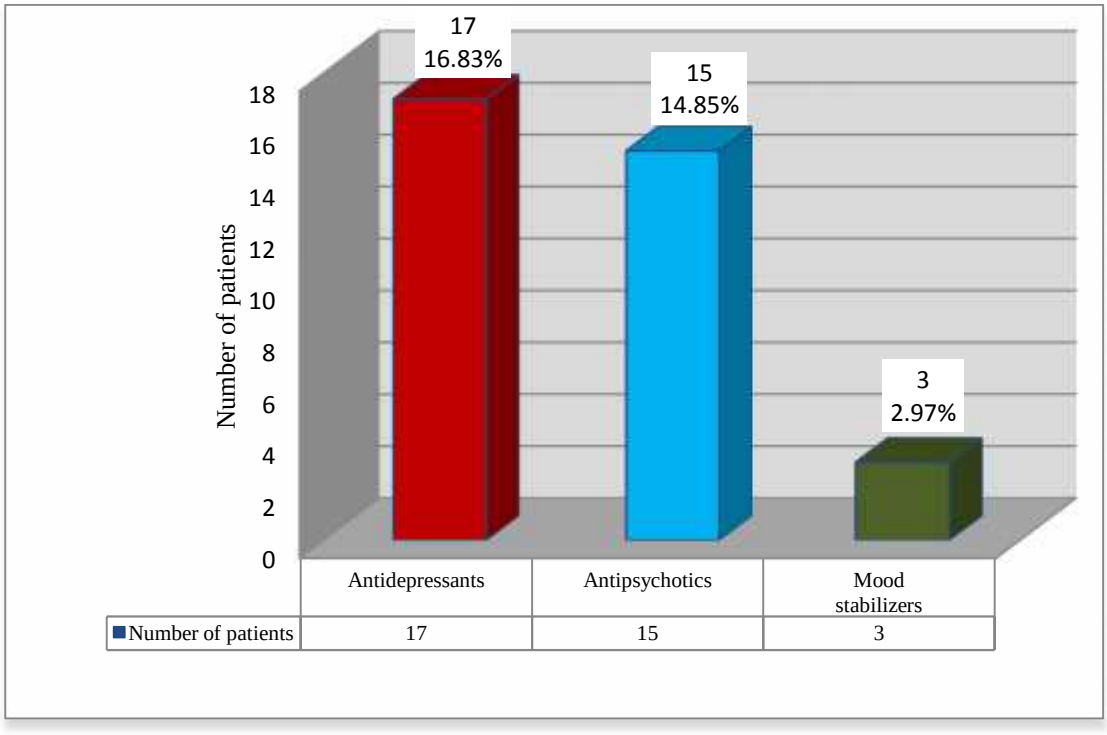


Table No.10 and bar diagram no. (2) shows the details of single psychotropic drug used by the patients. Seventeen (16.83%) were on antidepressants, 15(14.85%) were on antipsychotics and 3(2.97%) on mood stabilizers.

Table No.11 Combination of psychotropic drugs used N=66

Sl. No.	Variable		Frequency	%
1	Drugs	Antidepressants + Benzodiazepines	41	40.59%
		Antidepressants + Antipsychotics	09	8.91%
		Antipsychotics + Benzodiazepines	07	6.93%
		Antidepressants + Antipsychotics + Benzodiazepines	03	2.97%
		Mood stabilizers + Antipsychotics	02	1.98%
		Mood stabilizers + Antidepressants + Benzodiazepines	02	1.98%
		Mood stabilizers + Antipsychotics + Benzodiazepines	01	0.99%
		Mood stabilizers + Antipsychotics + Antidepressants	01	0.99%

Table No. 11 provides the details of combination of drugs for the patients included in the study. Forty one (40.59%) were on a combination of antidepressants and benzodiazepines, 9(8.91%) were on combination of antidepressants and antipsychotics, 7(6.93%) were on a combination of antipsychotics and benzodiazepines. Remaining patients were on different drug combination each being less than 5% as shown in the table.

Table No.12 Prevalence of SD N=101

Sl.No.	Variable		Frequency	%
1	Sexual dysfunction	Present	69	68.32%
		Absent	32	31.68%

Bar Diagram No. 3: Sexual dysfunction (SD) prevalence

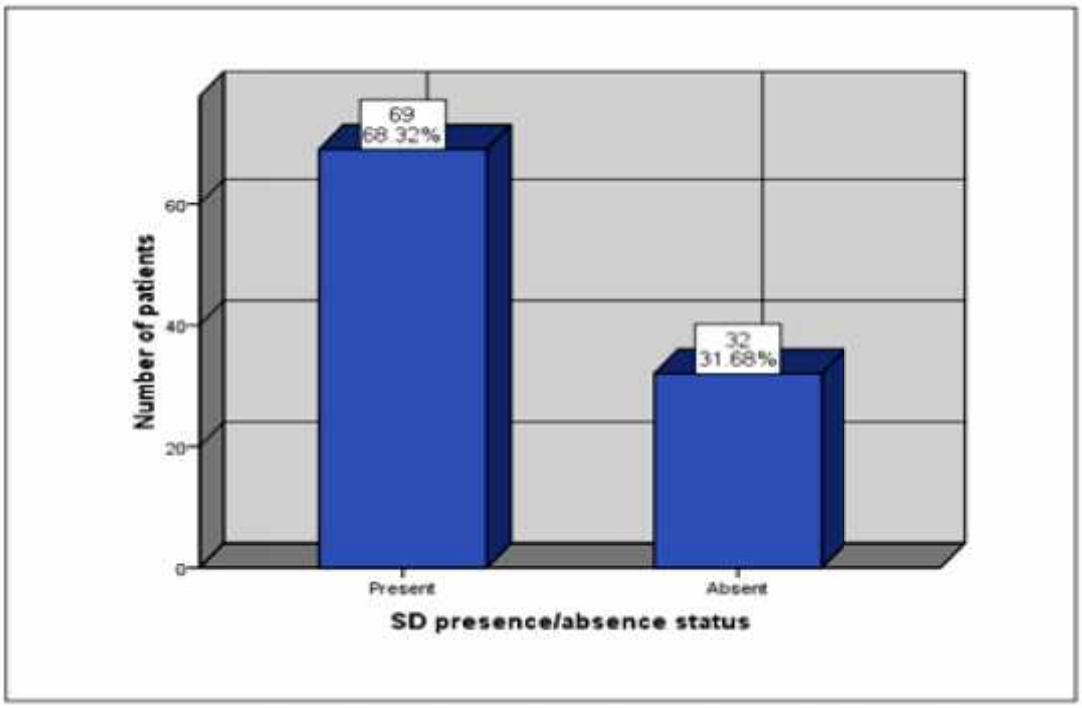


Table No. 12 and bar diagram no. (3) shows the prevalence of SD of patients included in the study. It was found that SD was present in 69(68.32%) and was absent in 32(31.68%).

Table No.13 SD and commonly used psychotropic drugs N=73

Sl. No	Variable		Drugs			χ^2 / F value	p value
			Antidepressant+Benzodiazepines (n=41)	Antidepressants (n=17)	Antipsychotics (n=15)		
1	Sexual dysfunction	Present	27(65.85%)	14(82.35%)	8(53.33%)	3.109	0.211
		Absent	14(34.15%)	3(17.65%)	7(46.67%)		

Bar Diagram No. 4: Sexual dysfunction (SD) presence/absence in patients receiving specific psychotropic medication

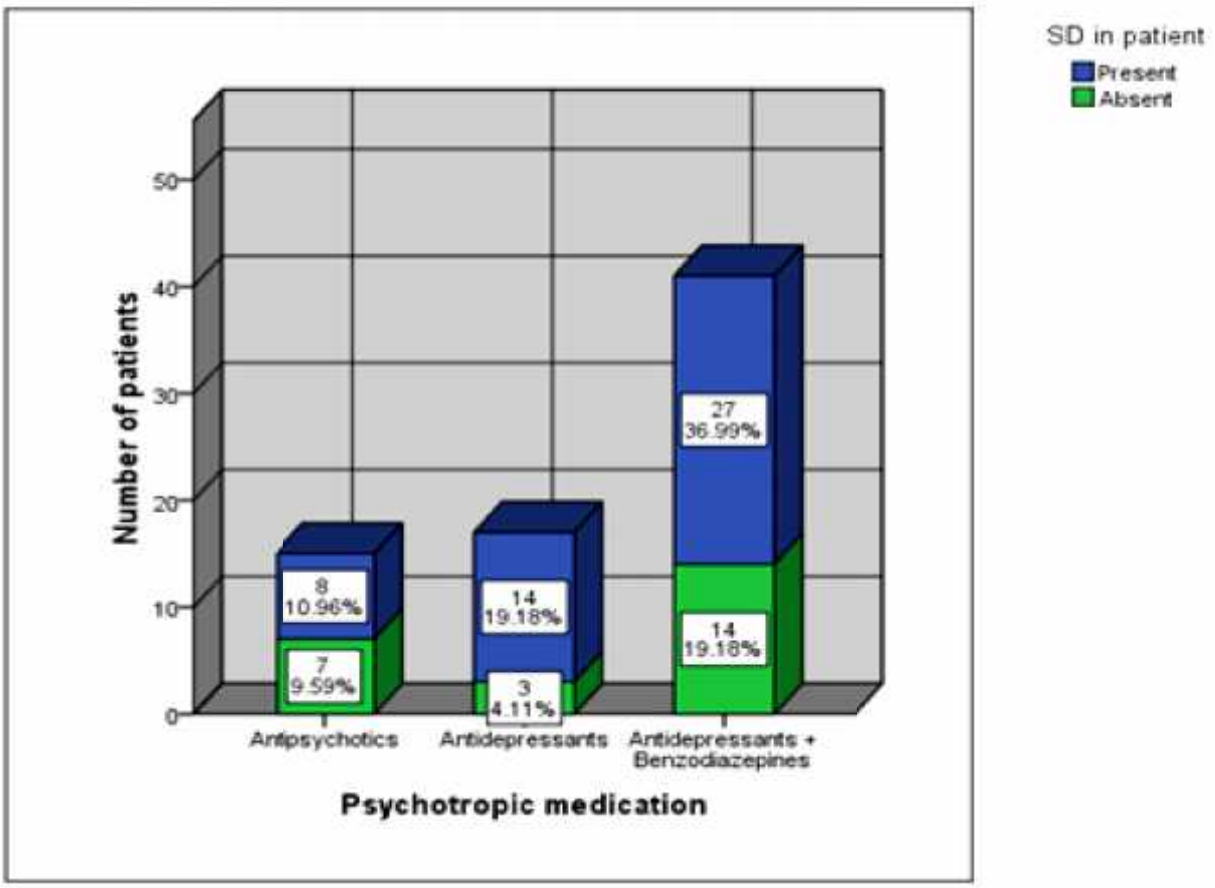


Table No.13 and bar diagram no. (4) shows the comparison of SD with commonly used psychotropic class of drugs. Out of 41 patients who were on a combination of antidepressants and mood stabilizers, SD was present in 27(65.85%) and absent in 14(34.15%). Patients who were on antidepressants (n=17), 14(82.35%) had SD and absent in 3(17.65%). Out of 15 patients who were on antipsychotics 8(53.33%) of them had SD and in 7(46.67%) SD was absent.

Table No.14 Details of sexual functioning after starting psychotropic Drugs

N=101

Sl. No.	Variable		Frequency	%
1	Libido	Increased	8	7.92%
		Decreased	65	64.36%
		Remained same	28	27.72%
2	Masturbation	Increased	1	0.99%
		Decreased	17	16.83%
		Remained same	83	82.18%
3	Intercourse	Increased	3	2.97%
		Decreased	50	49.51%
		Remained same	48	47.52%
4	Sexual responsiveness	Decreased	40	39.60%
		Remained same	61	60.40%
5	Lubrication	Decreased	34	33.66%
		Remained same	67	66.34%
6	Sexual satisfaction	Decreased	39	38.61%
		Remained same	62	61.39%

Bar Diagram No. 5: Change in sexual functioning related attributes

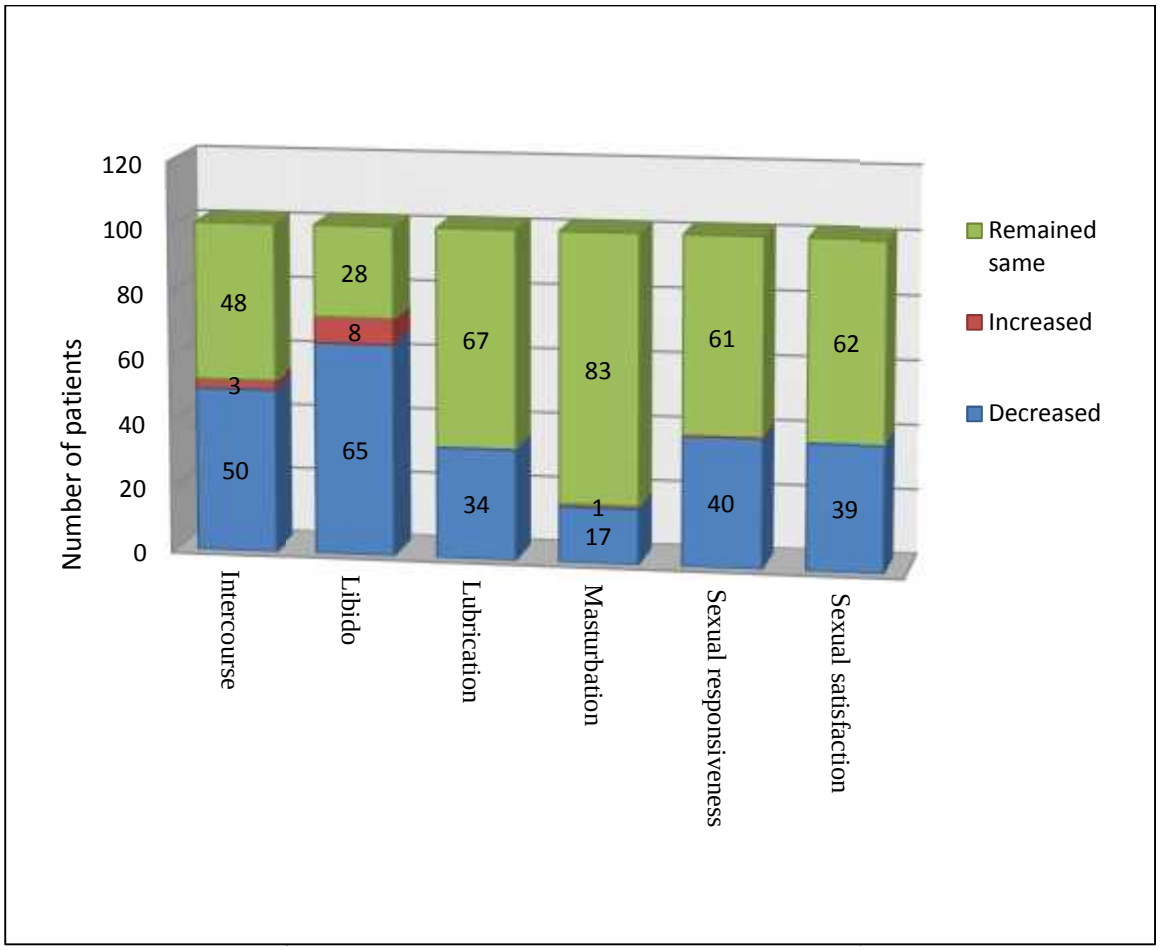


Table No.14 and bar diagram no (5) shows the details of sexual functioning after starting psychotropic medications. Libido was decreased in 65 (64.36%), the frequency of masturbation decreased in 17(16.83%), the frequency of intercourse decreased in 50 (49.51%), the sexual responsiveness decreased in 40 (39.60%), lubrication decreased in 34 (33.66%) and sexual satisfaction decreased in 39 (38.61%).

Table No. 15 Diagnostic categories of SD as per DSM-IV-TR N=69

Sl.No.	Variable	Frequency	%
1	Hypoactive sexual desire disorder	14	13.86%
2	Female sexual arousal disorder	3	2.97%
3	Female orgasmic disorder	2	1.98%
4	Sexual aversion disorder	0	0.00%
5	Hypoactive sexual desire disorder + Female sexual arousal disorder	2	1.98%
6	More than two Sexual dysfunction	48	47.52%

Bar Diagram No. 6: Types of sexual dysfunction (SD) among patients

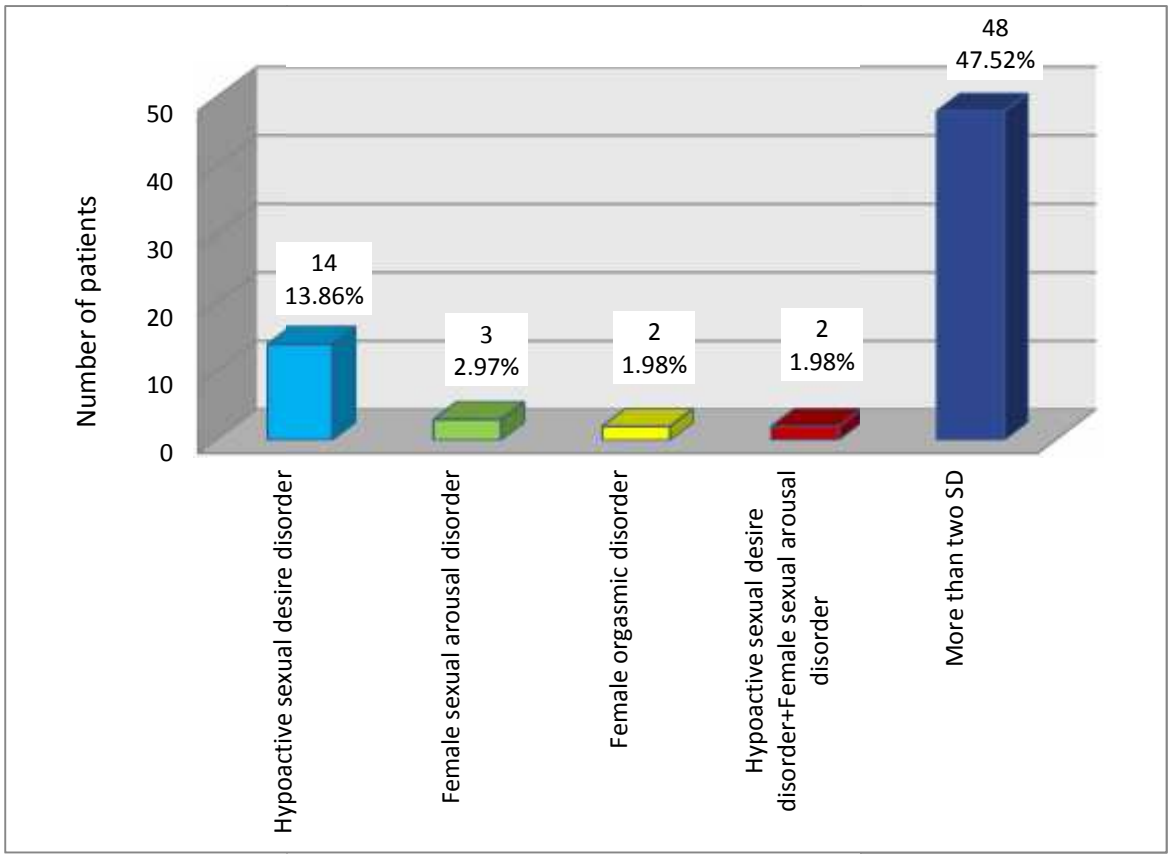


Table No.15 and bar diagram no (6) provides the details of diagnostic categories of sexual dysfunction as per DSM-IV- TR. Among the 101 patients included in the study 69(68.32%) of them had SD disorder. Out of 68 patients, 48

(47.52%) were affected by more than 2 types of sexual dysfunction disorders, 14 (13.86%) had hypoactive sexual desire disorder, 3(2.97%) had female sexual arousal disorder, 2 (1.98%) had female orgasmic disorder, 2(1.98%) had hypoactive sexual desire disorder along with female sexual arousal disorder and no patients with sexual aversion disorder.

Table No. 16 (a) FSFI scores in patients with SD and without SD N=101

Sl.No	Variable	Sexual dysfunction Present Mean±SD	Sexual dysfunction Absent Mean±SD	χ^2 / t value	P value
1	Female Sexual Function Index(FSFI) score	57.06±19.20	69.38±11.72	-3.346	**0.001**

Error Bar No. 1: FSFI scores of patients classified by sexual dysfunction (SD) status

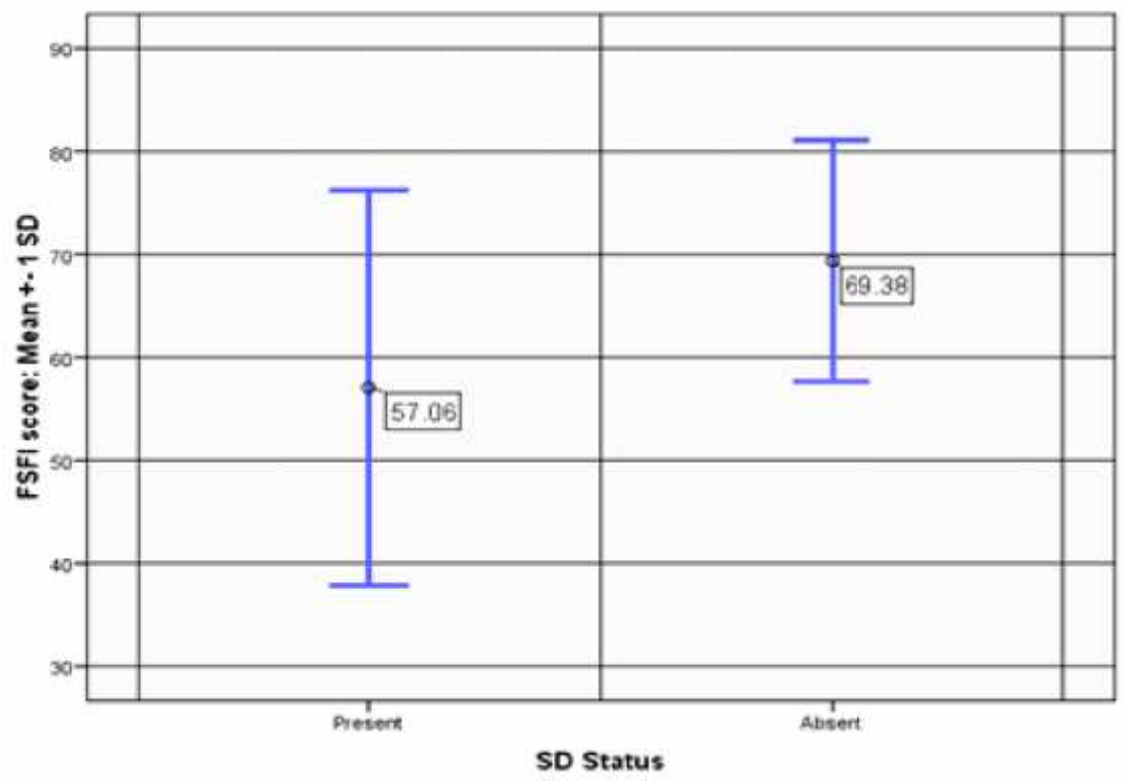


Table No.16 (b) FSFI scores and commonly used psychotropic medications N=101

Sl No.	Variable	Drugs			F value	p value
		Antipsychotics (n=15)	Antidepressants (n=17)	Antidepressant + Benzodiazepines (n=41)		
1	Female Sexual Function Index(FSFI) score	64.40±16.26	63.24±17.89	57.07±20.35	1.130	0.329

Error Bar No. 2 : Comparison of FSFI scores for commonly used classes of psychotropic medications

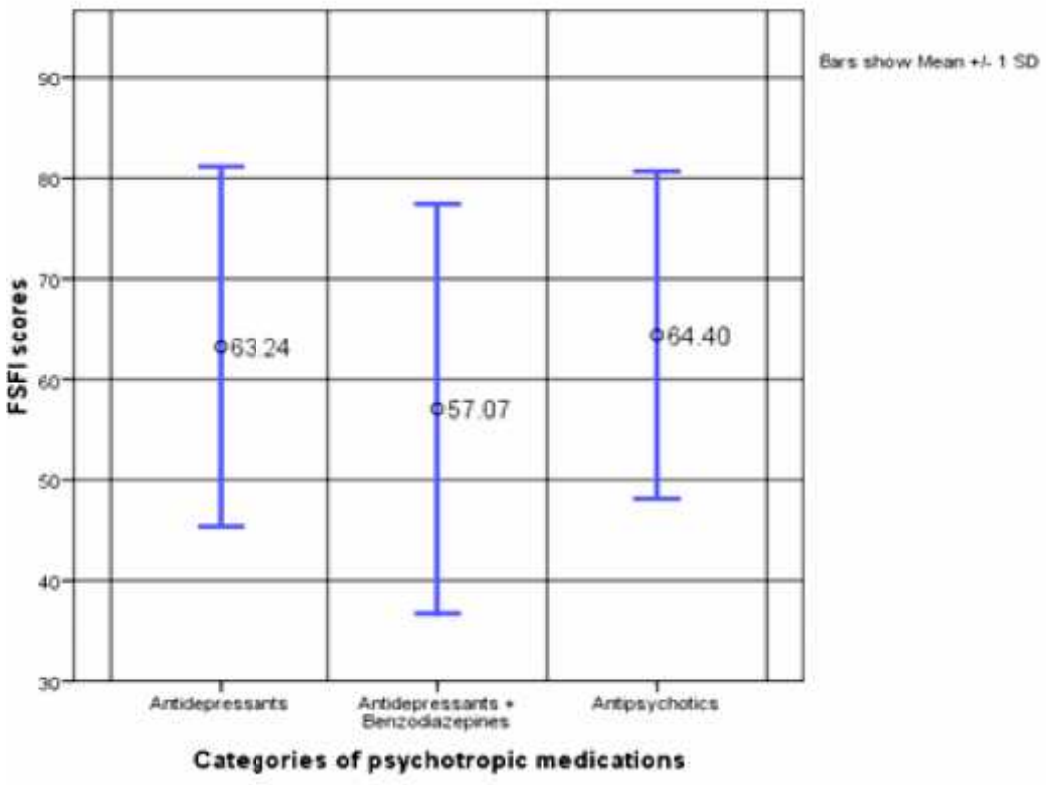


Table No.16 (a) and error bar no (1) shows the comparison of FSFI score in patients with SD and without SD. There was statistically significant p value (<0.001). Table No.16 (b) and error bar no (2) shows the comparison of FSFI score in patients with commonly used psychotropic medications. p value of (0.329) was not statistically significant.

DISCUSSION

This study is about female sexual dysfunction (FSD) in patients receiving psychotropic medication. Till this date (30/09/2011) there is no published study from India on Pub-med search on this topic. Totally 101 female patients attending psychiatry OPD who fulfilled the inclusion and exclusion criteria formed the sample of this study. Table No.1 showed that CGI score for the sample was 1.55±0.62.This indicated that the patients in the sample were asymptomatic for at least one month and were on continuous psychotropic medication. The Socio-demographic details of the patients were noted as shown in Table No.2.The age of the female patients included in the study ranged from 18 years to 45 years with a mean of 33.03±6.98 years. This particular age group was chosen to ensure that the effect of menopause did not alter the results of the study. The current study did not find any significant difference (p=0.447) between the presence or absence of FSD and age as shown in Table No.2 Previous study done by Laumann EO et al[38] also did not find any significant association between FSD and age. In the current study 91 (90.10%) patients were of Hindu religion, 9(8.91%) were Muslims and 1(0.99%) was a Christian. Table No.3 showed that the religious beliefs of the patients did not differ significantly (p=0.555) with the presence or absence of FSD. Overall presence or absence of SD was not statistically significant with respect to religion, type of occupation and residential status of the patient as shown by the same table.

The details of menstrual history and related disorders such as PMT, dysmenorrhoea and regularity of menstrual cycle were as shown in Table No.4. There were no significant difference (p=0.884, 0.830, 0.787) between presence or absence of SD and these variables as revealed by Table No.5. Contrary to the expectations that

menstruation difficulties or problems could be related to the presence or absence of SD, the tables 4 and 5 showed that there was no significant relationship between occurrence of SD and presence or absence of menstruation related problems. In fact presence or absence of PMT, dysmenorrhoea or regularity of menstruation did not have any relation to occurrence of SD.

The female patients included in the study had psychiatric illness with a mean duration of 4.23±3.85 years as shown in Table No.6. More than two years "mean duration" meant that these patients had chronic psychiatric illness and they were taking psychotropic drugs for a long time.

Table No.7 showed the patient's psychiatric condition which was diagnosed according to ICD-10 DCR criteria, by the treating psychiatrist. Commonest diagnoses were severe depressive disorder with psychotic symptoms 19(18.81%), paranoid schizophrenia 13(12.87%), recurrent depressive disorder current episode severe without psychotic symptoms 9(8.91%), moderate depressive disorder with somatic symptoms 8(7.92%), mixed anxiety and depressive disorder 7(6.93%), dysthymia 7(6.93%) and Obsessive compulsive disorder 7(6.93%).Other conditions were few in number (<5%). The diagnostic conditions were broadly grouped into psychosis, neurosis and mood disorders as shown in Table No. 8. Eventhough in the modern times neurosis and psychosis are not accepted as broad categories of psychiatric illness, for the sake of convenient description of diagnosis the patients were broadly grouped under psychosis (major mental disorder) and neurosis (minor mental disorder). In addition because the number of patients with mood disorder was very high numbering 57(56.44%){categories no 1,3,4,6,9,12,13,16,17 as shown in Table No.7}it was taken as a separate group along with neurosis and psychosis.

The psychoses group n=24(23.76%) included patients with paranoid schizophrenia and acute polymorphic psychosis with symptoms of schizophrenia as most common diagnoses. Neurosis group n=20(19.80%) included patients with mixed anxiety and depressive disorder and obsessive compulsive disorder as most common diagnoses. Mood disorders n=57(56.44%) included patients with severe depressive disorder with psychotic symptoms, recurrent depressive disorder current episode severe without psychotic symptoms, moderate depressive disorder with somatic symptoms and dysthymia as most common diagnoses. These diagnoses of each group are expected in psychiatric patients attending psychiatry unit of a general hospital attached to a medical college. In addition, all patients had chronic psychiatric illness where above diagnoses are definitely expected. Analysis of the data by comparison of SD amongst these three broad groups of psychiatric disorders did not reveal statistically significant (p=0.412) value as shown in Table No.9.On analysis of data by comparison of SD with the duration of illness (p=0.973) was obtained which is also not statistically significant. Among mood disorders patients highest number of patients were from severe depressive disorder with psychotic symptoms numbering 19(18 .81%) whereas among psychosis group highest number of patients were from paranoid schizophrenia numbering 13(12.87%) and among neurosis group highest number of patients were from two categories mixed anxiety and depressive disorder and OCD each numbering 7(6.93%). All these conditions are known to be either chronic and / or recurrent. Being so and because modern psychotropic drugs reasonably control these conditions the presence of these patients in high number in this sample is expected.

It was observed in Table No.9 SD was more prevalent in patients with mood disorders 42(41.58%), followed by patient's with psychosis numbering 15(14.85%) and neurosis numbering 12(11.88%).However, SD was not statistically significant.

Patients were on regular treatment with either single psychotropic medication or on a combination of multiple drugs. Table No.10 showed number of patients being treated with single psychotropic drug. Patients who were only on antidepressants were (n=17), on only antipsychotics (n=15) and on only mood stabilizers (n=3).Table No 11 showed that large number of patients were on combination of antidepressant with benzodiazepines (n=41), followed by combination of antidepressants and antipsychotics (n=9) and combination of antipsychotics and benzodiazepines (n=7).As Table No.13 also showed that majority number of patients numbering 66(65.34%) were on combination of drugs. The highest number of patients was on a combination of antidepressants and benzodiazepines. This may be because the female patients studied had more mood disorders predominantly depressive disorder exact number being 50 as revealed by Table No.7 {Categories no 1, 3 ,4 ,6,12 and 13}.

The prevalence of SD in the present study was 68.32% was shown in Table No.12. It is higher than 43% prevalence found among the general female population by the earlier study[5] in the United States of America. Similar finding of high prevalence of SD in patients who are receiving psychotropic drugs is present in literature.[1] There has been no study which investigated FSD as an adverse effect of all classes of psychotropic medication. The previous studies by Peuskens et al [47] and Ghadirian et al., [18] have focused on understanding the female SD as an adverse effect of one class or subclass or a certain specific medication belonging to a specific subclass of psychotropic medications. Hence direct comparisons between the overall

rate of prevalence of FSD among patients receiving psychotropic medication found in the present study and other studies could not be made. However, it is evident from this study that a large majority numbering 69(68.32%) patients which is more than two thirds of the sample had SD. This is a significantly large number.

The table no.13 showed that the prevalence of SD among the female patients being treated with the antipsychotics was 53.33% (n=15), with the antidepressants was 82.35% (n=17) and the antidepressants and benzodiazepines was 65.85% (n=41). The prevalence among these three groups did not differ significantly indicating that different classes of medication lead to varying rate of FSD among the patients. The patients on combination of antidepressants and benzodiazepines showed lesser prevalence of SD than the patients on antidepressant alone. This finding is difficult to explain. The current study showed that all psychotropic medications cause SD when used as single drug or in combinations. There is similar finding from the earlier study by Ernst C et al.[51] In the present study prevalence of SD caused by antidepressants was highest (82.35%).However, number of patients in the study is too small n=15) on antipsychotics and (n=17) on antidepressants to draw definite conclusion.

All the patients were interviewed by the investigator who happens to be married female. In Indian culture females do not easily talk about their sexual problem openly. It is almost a taboo. Married female investigator was an asset in reducing the cultural barrier and encouraging these patients to be free in explaining their sexual difficulties. Table No 14 showed that after starting psychotropic drugs there was decreased libido in 65 (64.36%), the frequency of masturbation decreased in 17 (16.83%), the frequency of intercourse decreased in 50 (49.51%) the sexual responsiveness decreased in 40 (39.60%), lubrication decreased in 34 (33.66%) and

sexual satisfaction decreased in 39 (38.61%). Thus more than two-third patients in the present study had decreased libido, almost half patients had decreased frequency of intercourse and more than one third patients had decreased sexual responsiveness, decreased lubrication and decreased sexual satisfaction as shown in Table No.14. In this study however very few cases had increased libido in 8(7.92%), increase in masturbation in 1(0.99%) and increase in frequency of intercourse in 3(2.97%) which is not expected. In other studies on various psychotropic drugs and its sexual side effects, there was not a single study showing increased sexual function. In terms of sexual side effects of psychotropics increasing sexual performance in these few patients could be the result of improvement of underlying primary psychiatric illness. However, definite reasoning cannot be offered.

DSM-IV-TR gives a detailed classification of SD disorders based on female sexual response cycle. It was used in the present study and Table No.15 showed the diagnostic categories of SD as per DSM-IV-TR. Among the 69 patients who had SD, 48(47.52%) were affected by more than 2 types of sexual function disorders, 14 (13.86%) of them had hypoactive sexual desire disorder, 3(2.97%) of them had female sexual arousal disorder, 2 (1.98%) had female orgasmic disorder, 2(1.98%) of them had hypoactive sexual desire disorder along with female sexual arousal disorder. Large majority had 2 and more SD which suggests that psychotropic drugs could be stronger culprits. However studies on this subject so far are scarce.[46]

The FSFI is a brief, multidimensional self report instrument for assessing the key dimensions of sexual function in women. Our patients were divided into two groups on the basis of SD being present or absent and the FSFI scores in these two groups were compared. A highly significant p value (p=0.001) was the result as

shown in Table No.16 (a). The table shows that score was 57.06±19.20 in patients who had SD and 69.38±11.72 in patients without SD. Higher scores on FSFI indicated lower SD and lower score indicated higher SD.FSFI being self study report and the patients being cooperative the findings can be considered reliable.

ANOVA test was applied to compare the FSFI scores among the patients who were on three groups of drugs namely antipsychotics, antidepressants and combination of antidepressants and benzodiazepines. The results are shown in Table. No 16(b). The mean of FSFI score was low among the group of patients who received antidepressants and benzodiazepines signifying that the group that received antidepressants and benzodiazepines have higher SD than the group which received antidepressants and antipsychotics separately. There is no previous study to compare this finding.

One of the objective of the current study was to compare the SD among the individual group of psychotropics (Atypical Antipsychotics and SSRIs).The number of patients on SSRI's (n=5) and atypical antipsychotics (n=12) were very few in number as shown in Table No.10.As the number of patients was small in different drug category the patients on all antipsychotics and patients on all antidepressants were clubbed together for statistical analysis. Significant number of patients in the current study were on combination of antidepressants and benzodiazepines (n=41) who were considered for subgroup analysis. Table No.13 showed that the presence of SD in patients who were on combination of antidepressants and benzodiazepines (n=41) was in 27(65.85%) patients which was the middle range when compared to those who were on antipsychotics (n=15) where SD was in 8 (53.33%) and to those who were on antidepressants (n=17) where SD was in 14(82.35%) respectively. The

higher prevalence of SD among patients on antidepressants is consistent with the study carried out by Ernst C, et al.[51]

To compare the SD among female patients receiving antipsychotics and antidepressants comparisons of FSFI Scores and sexual function details or DSM-IV-TR classified sexual disorders were made. The comparisons were also made according to whether antipsychotic drug was used or antidepressant drug was used or commonest combination of antidepressants and benzodiazepines was used. The results of these comparisons were statistically not significant. This finding meant that different class or combination of psychotropic medications was not specifically responsible for sexual dysfunction or sexual disorders.

All medications whether single or in combination did cause sexual dysfunction and / or sexual disorder in more than minimum one third number of cases. Because statistical significance was not visible and because number of patients treated with different medication was small a definite comment could not be made. There was no other study available which compared antipsychotics with antidepressants causing SD.

CONCLUSION

This study is the first attempt in India to find out the prevalence of sexual dysfunction among female patients who were on psychotropic medications either alone or in combination of drugs. The study indicated that the overall SD among such female patients was very high (68.32%). Number of patients on single psychotropic drug was so small that a definite conclusion could not be drawn about which individual drug was associated with which type of SD. The study emphasizes the need to carry out similar study on larger number of patients using single psychotropic drug to get better insight into this problem. This will help in better compliance and improved quality of life of these patients.

SUMMARY

- Psychotropic medications are known to cause SDs among the patients receiving these medications. Sexual dysfunction may lead to non-compliance. Hence it is important to understand the adverse sexual effects of psychotropic medications to provide proper medical care to psychiatric patients.
- As there was no data available in India quantifying the prevalence of SD and type of SD among female patients receiving various psychotropic medications, present study was conducted to gain more insight about this problem.
- The study was conducted among Indian female psychiatric patients receiving psychotropic medication to understand
    - The prevalence of SD
    - The prevalence of various types of SDs
    - To compare the SD among female patients receiving antipsychotics and antidepressants.
- All the female psychiatric patients who were attending the psychiatry outpatient department between 1st January 2010 and 30th April 2011 were recruited for the study as per the inclusion and exclusion criteria. Initial psychiatric diagnosis was made as per ICD-10 DCR criteria. If SD was found to exist, DSM-IV-TR was used to categorize the SD. Then the severity of SD was assessed using FSFI scale. The data was analysed using SPSS Version 17 software.
- The data was collected for 101 female psychiatric patients. The prevalence of SD in the present study is 69 (68.32%). Out of 15(14.85% of total sample) patients treated with antipsychotics 8 (53.33%) and out of 17 (16.83% of total sample)

patients treated with antidepressants 14(82.35%) were found to have SD. Out of 41(40.59% of total sample) patients treated with antidepressants and benzodiazepines 27(65.85%) were found to have SD. Out of 101 patients as per DSM-IV-TR 48 (47.52%) were diagnosed to have more than 2 types of SD disorders, 14(13.86%) had HSDD, 3(2.97%) had FSAD, 2(1.98%) had FOD, 2(1.98%) had HSDD along with FSAD and 0(0%) of them with no SAD.

- The study found that significant number of female patients treated with psychotropic medications had SD. Out of 101 patients 69(68.32%) had SD. However, the number of patients studied was so small that any specific conclusion about an individual psychotropic medication causing specific SD could not be drawn. Similarly because of small number of patients comparison of specific antipsychotics and antidepressants causing SD could not be made.

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ANNEXURE I

LIST OF SYSTEMIC ILLNESSES CAUSING SD

- Neurological disease: stroke, spinal cord injury, parkinsonism
- Trauma, genitalsurgery, radiation
- Endocrinopathies : Diabetes, Hyperprolactinemia
- Liver and/or renal failure
- Cardiovascular disease

ANNEXURE II

LIST OF NONPSYCHOTROPIC DRUGS CAUSING SD

- Antihypertensives: Beta blockers, ACE inhibitors, Calcium channel blockers
- Thiazide diuretics: Bendrofluazide
- Antiparkinsonian drugs: L-dopa
- Anti androgens: Cyproterone acetate and flutamide
- Gonadotrophin releasing hormone analogues: goserelin and leuprorelin
- Prostate medications:5 alpha reductase inhibitor

ANNEXURE III

CLINICAL GLOBAL IMPRESSION SCALE (CGI-S)

Severity of illness:

Considering your total clinical experience with this particular population, how mentally ill is the patient at this time?

- 0 = Not assessed
- 1 = Normal, not at all ill
- 2 = Borderline mentally ill
- 3 = Mildly ill
- 4 = Moderately ill
- 5 = Markedly ill
- 6= Severely ill
- 7 = Among the most extremely ill patients

ANNEXURE IV

DSM- IV-TR DIAGNOSTIC CRITERIA

DSM-IV-TR Diagnostic criteria for Hypoactive Sexual Desire Disorder

A. Persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity. The judgment of deficiency or absence is made by the clinician, taking in to account the factors that affect sexual functioning, such as age and context of the person's life.

B. The disturbance causes marked distress or interpersonal difficulty.

C. The SD is not better accounted for another Axis I disorder (except another SD) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Specified Type:

- Lifelong type
- Acquired Type

Specified Type:

- Generalized type
- Situational Type

Specify:

- Due to psychological factors
- Due to combined factors

DSM-IV-TR Diagnostic criteria for Sexual Aversion Disorder

A. Persistent or recurrent extreme aversion to, and avoidance of, all (or all most all) genital sexual contact with sexual partner.

B. The disturbance causes marked distress or interpersonal difficulty.

C. The SD is not better accounted for another Axis I disorder (except another SD)

Specified Type:

- Lifelong type
- Acquired Type

Specified Type:

- Generalized type
- Situational Type

Specify:

- Due to psychological factors
- Due to combined factors

DSM-IV-TR Diagnostic criteria for Female Sexual Arousal Disorder

A. Persistently or recurrent inability to attain, or to maintain until completion of the sexual activity, an adequate lubrication-swelling response of sexual excitement.

B. The disturbance causes marked distress or interpersonal difficulty.

C. The SD is not better accounted for another Axis I disorder (except another SD) and is not due exclusively to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Specified Type:

- Lifelong type
- Acquired Type

Specified Type:

- Generalized type
- Situational Type

Specify:

- Due to psychological factors
- Due to combined factors

DSM-IV-TR Diagnostic criteria for Female Orgasmic Disorder

A. Persistent or recurrent delay in, or absence of, orgasm following a normal sexual excitement phase. Women exhibit wide variability in the type or intensity of stimulation that triggers orgasm. The diagnosis of female orgasmic disorder should be based on the clinician's judgment that the woman's orgasmic capacity is less than that would be reasonable for her age, sexual experience, and the adequacy of sexual stimulation she receives.

B. The disturbance causes marked distress or interpersonal difficulty.

C. The SD is not better accounted for another Axis I disorder (except another SD) and is not exclusively due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Specified Type:

- Lifelong type
- Acquired Type

Specified Type:

- Generalized type
- Situational Type

Specify:

- Due to psychological factors
- Due to combined factors

ANNEXURE V- A

FEMALE SEXUAL FUNCTION INDEX (FSFI)

Question	Response option
Q1: Over the past 4 weeks, how **often** did you feel sexual desire or interest?	5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
Q2: Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?	5 = Very high 4 = High 3 = Moderate 2 = Low 1 = Very low or none at all
Q3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
Q4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on")during sexual activity or intercourse?	0 = No sexual activity 5 = Very high 4 = High 3 = Moderate 2 = Low 1 = Very low or none at all

Q5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?	0 = No sexual activity 5 = Very high confidence 4 = High confidence 3 = Moderate confidence 2 = Low confidence 1 = Very low or no confidence
Q6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
Q7: Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
Q8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?	0 = No sexual activity 1 = Extremely difficult or impossible 2 = Very difficult 3 = Difficult 4 = Slightly difficult 5 = Not difficult

Q9: Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
Q10: Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?	0 = No sexual activity 1 = Extremely difficult or impossible 2 = Very difficult 3 = Difficult 4 = Slightly difficult 5 = Not difficult
Q11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?	0 = No sexual activity 5 = Almost always or always 4 = Most times (more than half the time) 3 = Sometimes (about half the time) 2 = A few times (less than half the time) 1 = Almost never or never
Q12: Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?	0 = No sexual activity 1 = Extremely difficult or impossible 2 = Very difficult 3 = Difficult 4 = Slightly difficult 5 = Not difficult

Q13: Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?	0 = No sexual activity 5 = Very satisfied 4 = Moderately satisfied 3 = About equally satisfied and dissatisfied 2 = Moderately dissatisfied 1 = Very dissatisfied
Q14: Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?	0 = No sexual activity 5 = Very satisfied 4 = Moderately satisfied 3 = About equally satisfied and dissatisfied 2 = Moderately dissatisfied 1 = Very dissatisfied
Q15: Over the past 4 weeks, how satisfied have you been with your sexual relationship with your partner?	5 = Very satisfied 4 = Moderately satisfied 3 = About equally satisfied and dissatisfied 2 = Moderately dissatisfied 1=very dissatisfied
Q16: Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?	5 = Very satisfied 4 = Moderately satisfied 3 = About equally satisfied and dissatisfied 2 = Moderately dissatisfied 1 = Very dissatisfied

Q17: Over the past 4 weeks, how **often** did you experience discomfort or pain during vaginal penetration?	0 = Did not attempt intercourse I = Almost always or always 2 = Most times (more than half the time) 3 = Sometimes (about half the time) 4 = A few times (less than half the time) 5 = Almost never or never
Q18: Over the past 4 weeks, how **often** did you experience discomfort or pain following vaginal penetration?	0 = Did not attempt intercourse 1 = Almost always or always 2 = Most times (more than half the time) 3 = Sometimes (about half the time) 4 = A few times (less than half the time) 5 = Almost never or never
Q19. Over the past 4 weeks, ho w would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?	0 = Did not attempt intercourse 1 = Very high 2 = High 3 = Moderate 4 = Low 5 = Very low or none at all

ANNEXURE V - B

FSFI (Kannada) / ಮಹಿಳಾ ಲೈಂಗಿಕ ಕಾರ್ಯ ಸೂಚಿ

	ಪ್ರಶ್ನೆ	ಪರ್ಯಾಯ ಉತ್ತರಗಳು
ಪ್ರ ೧.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ನಿಮಗೆ ಎಷ್ಟು ಸಾರಿ ಕಾಮದ ಬಯಕೆಯಾಗಿತ್ತು?	೫ – ಯಾವಾಗಲೂ ೪ - ಬಹಳ ಸಾರಿ ೩ – ಒಮ್ಮೊಮ್ಮೆ ೨ - ಕೆಲವೇ ಸಾರಿ ೧ - ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೨.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ನಿಮ್ಮ ಲೈಂಗಿಕ ಇಚ್ಛೆಯ ಅಥವಾ ಬಯಕೆಯ ಮಟ್ಟ ಹೇಗಿತ್ತು?	೫ - ಅತಿ ಹೆಚ್ಚಿನ ಮಟ್ಟದಲ್ಲಿ ೪ - ಹೆಚ್ಚಿನ ಮಟ್ಟದಲ್ಲಿ ೩ – ಸಾಧಾರಣ ೨ – ಕಡಿಮೆ ೧ - ಅತಿ ಕಡಿಮೆ / ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೩.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ, ನಿಮ್ಮ ಕಾಮೋತ್ಪ್ರೇಜನ ಹೇಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ – ಯಾವಾಗಲೂ ೪ - ಬಹುತೇಕ (ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೨ – ಒಮ್ಮೊಮ್ಮೆ(ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೧ - ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೪.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ, ನಿಮ್ಮ ಕಾಮದ ಇಚ್ಛೆ ಹೇಗಿತ್ತು?	೦ - ಯಾವುದೇ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ - ಅತಿ ಏರಿಕೆಯಲ್ಲಿ ೪ – ಏರಿಕೆಯಲ್ಲಿ ೩ - ಮಧ್ಯಮ/ಸಾಧಾರಣ ೨ – ಕಡಿಮೆ ೧ - ಅತಿ ಕಡಿಮೆ / ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೫.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಕಾಮೋತ್ಪ್ರೇಜನದ ಬಗ್ಗೆ ನಿಮ್ಮ ವಿಶ್ವಾಸ ಹೇಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ - ಅತಿ ಹೆಚ್ಚಿನ ವಿಶ್ವಾಸ ೪ - ಹೆಚ್ಚಿನ ವಿಶ್ವಾಸ ೩ - ಸಾಧಾರಣ ವಿಶ್ವಾಸ ೨ - ಕಡಿಮೆ ವಿಶ್ವಾಸ ೧ - ಅತಿ ಕಡಿಮೆ / ವಿಶ್ವಾಸವೇ ಇಲ್ಲ

	ಪ್ರಶ್ನೆ	ಪರ್ಯಾಯ ಉತ್ತರಗಳು
ಪ್ರ ೬.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ ಸಂಭೋಗದ ಸಮಯ ನೀವು ಕಾಮದ ಬಯಕೆಯ ಬಗ್ಗೆ, ಹೊಂದಿದ ಸಮಾಧಾನ/ತೃಪ್ತಿ ಎಷ್ಟು?	೦ - ಯಾವುದೇ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ – ಯಾವಾಗಲೂ ೪ - ಹೆಚ್ಚಿನ ಸಾರಿ(ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೨ – ಒಮ್ಮೊಮ್ಮೆ(ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೧ - ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೭.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ ಲೋಳೆಯಾಗುವುದು (ಹಸಿಯಾಗುವುದು) ಹೇಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ – ಯಾವಾಗಲೂ ೪ – ಬಹುತೇಕ(ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೨ –ಒಮ್ಮೊಮ್ಮೆ (ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೧ - ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೮.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ ಲೋಳೆಯಾಗುವುದು(ಹಸಿಯಾಗುವುದು) ಎಷ್ಟು ಕಷ್ಟವಾಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೧ - ಅತ್ಯಂತ ಕಷ್ಟಕರ / ಅಸಾಧ್ಯ ೨ - ಬಹಳ ಕಷ್ಟಕರ ೩ – ಕಷ್ಟಕರ ೪ - ಸ್ವಲ್ಪ ಕಷ್ಟಕರ ೫ - ಯಾವುದೇ ಕಷ್ಟವಿಲ್ಲದೆ
ಪ್ರ ೯.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ ಲೋಳೆ(ಹಸಿ)ಯನ್ನು ಕೊನೆಯವರೆಗೂ ಉಳಿಸಿಕೊಳ್ಳುವುದು ಹೇಗಿತ್ತು?	೦ - ಯಾವುದೇ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ – ಯಾವಾಗಲೂ ೪ - ಬಹುತೇಕ (ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೨ - ಕಡಿಮೆ ಸಾರಿ (ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೧ – ಇಲ್ಲ/ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೧೦.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ ಲೋಳೆ(ಹಸಿ)ಯನ್ನು ಕೊನೆಯವರೆಗೂ ಉಳಿಸಿಕೊಳ್ಳುವುದು ಎಷ್ಟು ಕಷ್ಟಕರವಾಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೧ - ಅತ್ಯಂತ ಕಷ್ಟಕರ / ಅಸಾಧ್ಯ ೨ - ಬಹಳ ಕಷ್ಟಕರ ೩ – ಕಷ್ಟಕರ ೪ - ಸ್ವಲ್ಪ ಕಷ್ಟಕರ ೫ - ಯಾವುದೇ ಕಷ್ಟವಿಲ್ಲದೆ

	ಪ್ರಶ್ನೆ	ಪರ್ಯಾಯ ಉತ್ತರಗಳು
ಪ್ರ ೧೧.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ, ನೀವು ಎಷ್ಟು ಸಾರಿ ತೀವ್ರ ಸ್ಥಿತಿ(ಅತೀ ಸಂತೋಷದ ಕ್ಷಣ) ಅನುಭವಿಸಿದ್ದೀರಿ?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ – ಯಾವಾಗಲೂ ೪ - ಬಹುತೇಕ (ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೨ - ಕಡಿಮೆ ಸಾರಿ (ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೧ - ಇಲ್ಲ/ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೧೨.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ನೀವು ಸಂಭೋಗ ಮಾಡಿದಾಗ ಅತೀ ಸಂತೋಷದ ಕ್ಷಣವನ್ನು ಅನುಭವಿಸುವುದು/ಪಡೆಯುವುದು ಎಷ್ಟು ಕಷ್ಟಕರವಾಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೧ - ಅತ್ಯಂತ ಕಷ್ಟಕರ / ಅಸಾಧ್ಯ ೨ - ಬಹಳ ಕಷ್ಟಕರ ೩ – ಕಷ್ಟಕರ ೪ - ಸ್ವಲ್ಪ ಕಷ್ಟಕರ ೫ - ಯಾವುದೇ ಕಷ್ಟವಿಲ್ಲದೆ
ಪ್ರ ೧೩.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ನೀವು ಸಂಭೋಗದ ಅತೀ ಸಂತೋಷದ ಕ್ಷಣ (ಕಾಮೋತ್ಕ್ರೇಜನ ಸ್ಥಿತಿ) ಅನುಭವಿಸುವಲ್ಲಿ, ಎಷ್ಟರ ಮಟ್ಟಿಗೆ ಸಮಾಧಾನ ಹೊಂದಿದ್ದೀರಿ?	೦ - ಯಾವುದೇ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ - ಬಹಳ ಸಮಾಧಾನ ೪ - ಸಾಧಾರಣ ಸಮಾಧಾನ ೩ - ಸಮಾಧಾನ/ಅಸಮಾಧಾನ ಎರಡೂ ಸರಿ ಸಮಾನ ೨ - ಸಾಧಾರಣ ಅಸಮಾಧಾನ ೧ - ಅತ್ಯಂತ ಅಸಮಾಧಾನ
ಪ್ರ ೧೪.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಲೈಂಗಿಕ ಕ್ರಿಯೆಯಲ್ಲಿ, ತೊಡಗಿದಾಗ ನಿಮ್ಮ ಪತಿಯೊಂದಿಗೆ ಎಷ್ಟರ ಮಟ್ಟಿಗೆ ಭಾವನಾತ್ಮಕವಾಗಿ ಸಾಮೀಪ್ಯ ಹೊಂದಿದ್ದಿರಿ?	೦ - ಯಾವುದೇ ಲೈಂಗಿಕ ಚಟುವಟಿಕೆ ಇಲ್ಲ ೫ - ಬಹಳ ಸಮಾಧಾನ ೪ - ಸಾಧಾರಣ ಸಮಾಧಾನ ೩ - ಸಮಾಧಾನ/ಅಸಮಾಧಾನ ಎರಡೂ ಸರಿ ಸಮಾನ ೨ - ಸಾಧಾರಣ ಅಸಮಾಧಾನ ೧ - ಅತ್ಯಂತ ಅಸಮಾಧಾನ
ಪ್ರ ೧೫.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಲೈಂಗಿಕ ಸಂಬಂಧದ ದೃಷ್ಟಿಯಿಂದ ನಿಮ್ಮ ಪತಿಯೊಂದಿಗೆ ನೀವು ಸಮಾಧಾನ/ತೃಪ್ತಿ ಹೊಂದಿದ್ದೀರಾ?	೫ - ಬಹಳ ಸಮಾಧಾನ ೪ - ಸಾಧಾರಣ ಸಮಾಧಾನ ೩ - ಸಮಾಧಾನ/ಅಸಮಾಧಾನ ಎರಡೂ ಸರಿ ಸಮಾನ ೨ - ಸಾಧಾರಣ ಅಸಮಾಧಾನ ೧ - ಅತ್ಯಂತ ಅಸಮಾಧಾನ

	ಪ್ರಶ್ನೆ	ಪರ್ಯಾಯ ಉತ್ತರಗಳು
ಪ್ರ ೧೬.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಒಟ್ಟಾರೆ ದೃಷ್ಟಿಯಿಂದ ನಿಮ್ಮ ಲೈಂಗಿಕ ಜೀವನದಲ್ಲಿ ನೀವೆಷ್ಟು ಸಮಾಧಾನ ಹೊಂದಿದ್ದೀರಿ?	೫ - ಬಹಳ ಸಮಾಧಾನ ೪ - ಸಾಧಾರಣ ಸಮಾಧಾನ ೩ - ಸಮಾಧಾನ/ಅಸಮಾಧಾನ ಎರಡೂ ಸರಿ ಸಮಾನ ೨ - ಸಾಧಾರಣ ಅಸಮಾಧಾನ ೧ - ಅತ್ಯಂತ ಅಸಮಾಧಾನ
ಪ್ರ ೧೭.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಲೈಂಗಿಕ ಕ್ರಿಯೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ, ನಿಮಗೆ ಎಷ್ಟರ ಮಟ್ಟಿಗೆ ತೊಂದರೆ ಅಥವಾ ನೋವಿನ ಅನುಭವಾಗಿತ್ತು?	೦ - ಲೈಂಗಿಕ ಕಾರ್ಯ ಮಾಡಿಲ್ಲ ೧ – ಯಾವಾಗಲೂ ೨ - ಬಹಳ ಮಟ್ಟಿಗೆ (ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೪ - ಅಪರೂಪವಾಗಿ (ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೫ - ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೧೮.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಸಂಭೋಗದ ವೇಳೆ ನೀವು ಎಷ್ಟರ ಮಟ್ಟಿಗೆ ತೊಂದರೆ ಅಥವಾ ನೋವು ಅನುಭವಿಸಿದ್ದೀರಿ?	೦ - ಲೈಂಗಿಕ ಕಾರ್ಯ ಮಾಡಿಲ್ಲ ೧ – ಯಾವಾಗಲೂ ೨ - ಬಹಳ ಮಟ್ಟಿಗೆ (ಅರ್ಧಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಾರಿ) ೩ - ಕೆಲವು ಸಾರಿ (ಸುಮಾರು ಅರ್ಧದಷ್ಟು ಸಾರಿ) ೪ - ಅಪರೂಪವಾಗಿ (ಅರ್ಧಕ್ಕಿಂತ ಕಡಿಮೆ ಸಾರಿ) ೫ - ಇಲ್ಲವೇ ಇಲ್ಲ
ಪ್ರ ೧೯.	ಕಳೆದ ನಾಲ್ಕು ವಾರಗಳಲ್ಲಿ, ಸಂಭೋಗದ ಸಮಯದಲ್ಲಿ, ನಿಮಗೆ ಆದ ತೊಂದರೆ ಅಥವಾ ನೋವಿನ ಮಟ್ಟವನ್ನ ಹೇಗೆ ಅಳೆಯುವಿರಿ?	೦ - ಸಂಭೋಗಕ್ಕೆ ಪ್ರಯತ್ನಿಸಿಲ್ಲ ೧ - ಅತಿ ಹೆಚ್ಚು ೨ – ಹೆಚ್ಚು ೩ – ಸಾಧರಣ ೪ – ಕಡಿಮೆ ೫ - ಅತಿ ಕಡಿಮೆ ಅಥವಾ ಇಲ್ಲವೇ ಇಲ್ಲ

ANNEXURE VI

CONSENT FORM

SEXUAL DYSFUNCTION AMONG FEMALES WHO ARE RECEIVING PSYCHOTROPIC MEDICATION-A HOSPITAL BASED CROSS SECTIONAL STUDY

Principal Investigator (PI):- Dr. _____

Objective/Purpose of the study:-

You are being requested to be a subject in a cross sectional study to know the nature of SD among female patients who are on psychotropic medications at KLES Prabhakar Kore hospital and MRC, Belgaum conducted between January 2010 and April 2011, by Dr. _____, a post graduate student in Dept of Psychiatry at J N Medical College, Belgaum, under KLE University, Belgaum, Karnataka.

You have been requested to participate in this study as you are likely to have SD from psychotropic medication. Hence the above study helps to find the prevalence and nature of SD among female patients who are receiving psychotropic medication but also helps to treat the same appropriately.

Procedure involved:

If you agree to be a part of the study, the PI will interview the female patient attending the psychiatry OPD. Sociodemographic details and sexual history will be collected. Then she will be given a questionnaire and her SD assessed using female sexual function index. In addition, DSM-IV-TR will be used to categorize the female

sexual function disorder in each case. In case if the patient is illiterate PI will be reading the questionnaire and then the patient has to answer.

Risks and benefits involved:

There are no risks involved. During the period of study, existence or development of any significant findings in terms of psychiatric disorders will be informed by the PI to you as well as the parent consultant for the appropriate action.

Alternatives:

Your participation in this study is totally a voluntary decision. If you do not want to be a part of the study, you may refuse for the same or if you are already a part of the study and if you want to withdraw from the study for any reason, you may do so without any hesitation. Discontinuation from the study for any reason will not affect your current or future relationship with KLES Prabhakar Kore Hospital & MRC.

Privacy and confidentiality:-

The information provided by you will be known to the PI and the members of the research team. This information will remain confidential and will be disclosed to others only with your written permission or if required by the law.

Financial incentives for participation:-

You will not be paid / offered any gifts for participation in the research. There will not be any remuneration for participating in the research and you will not be reimbursed for any expenses, such as bus/train/companion/assistant etc.

Authorization to publish results:-

When the results of the research are to be published or discussed in conferences by the PI, no information will be disclosed that will reveal your identity.

If you have any questions about this study, you may contact Dr. V. D. Patil, Principal and Chairman, Institutional Ethical Committee for Human Subjects Research, J. N. Medical College, Belgaum. Ph:0831 2471350 or Dr. _____ _____ Ph: _____. You will be given a copy of this consent form for your information and for your records.

Statement of consent:-

I have read and have completely understood the entire information given in the consent form which explains all the details of the study like the purpose, procedure involved, risks & benefits, privacy & confidentiality, incentives and the authorization to publish the results of the study. My signature in the space provided for signature below indicates that I have voluntarily agreed to participate in the study. I may withdraw my participation myself for any reason or may be withdrawn by the investigator from the study for any reason at any time. I am not giving up any of my legal rights by signing this consent form. I will be given a copy of this consent form.

Signature of the participant with date: _____

Name of the participant: _____

Signature of the authorized representative with date: _____

Name of the authorized representative: _____

Signature of the witness with date: _____

Name of the witness: _____

Signature of the Investigator with date: _____

ANNEXURE VII

PROFORMA

Sociodemographic details:

Name:

Age:

Address:

Religion:

Residence:

Education:

Occupation: Socioeconomic status:

History:

Duration of illness:

Diagnosis (ICD-10 DCR)

Past History:

Drugs Duration

1.

2.

Additional drugs

Assessments:

CGI-Score:

Female Sexual Function Index (FSFI) Score:

Personal History:

Married / Unmarried Duration of active sexual life:

Family History:

Menstrual History:

Age of menarche:

Details of menstrual cycles:

Premenstrual tension: LMP:

Sexual History:

Libido

Frequency of intercourse

Frequency of masturbation

Sexual responsiveness

Lubrication of vagina

Orgasmic arousal:

Sexual satisfaction:

GPE:

Pulse: BP: RR: Temp:

Systemic Examination:

CVS:

RS:

CNS:

PA:

Gynecological examination (if required):

Sexual Dysfunction:

Present /Absent

Type of Sexual Dysfunction (DSM- IV- TR):

ANNEXURE VIII (MASTER CHART)

Name	Age	Religion	SES	Occupation	Dur_of_Illness	classification	TreatmentHistory	Diagnosis_DSM_IV	DRUGS	CGI_Score	Residence	PMT	Dysmenorrhea	Consanguinity	Dur_of_SexualLife	MenstrualCycleRegularity	Libido	Freq_of_Mastrubation	Freq_of_Intercourse	Sex.Responsiveness	Sex.Lubrication	Sex.OrgasmicArousal	Sex.SexualSatisfaction	GPEResult	Sys.Exam	Dysfunc_Status	Dysfunc_Diagnosis	FSFI_Q01
1	32	1	2	1	6	3	27	5	8	1	1	1	1	1	14	1	1	1	1	3	3	3	3	1	1	2	0	3
2	44	1	2	1	12	3	7	6	4	1	2	1	1	1	26	1	2	3	2	3	3	3	3	1	1	1	1	1
3	25	1	2	3	3	3	4	1	2	1	1	2	2	2	10	2	2	3	2	3	3	3	3	1	1	1	1	3
4	45	1	2	1	20	1	8	9	6	2	2	1	2	2	29	1	2	3	2	3	3	3	3	1	1	1	1	3
5	30	1	2	1	8	1	2	9	1	2	1	2	2	2	8	1	3	3	3	3	3	3	3	1	1	2	0	3
6	30	2	2	1	5	3	10	3	5	2	2	1	1	1	13	2	2	3	2	2	2	2	2	1	1	1	22	3
7	41	1	2	1	3	3	5	20	2	1	2	2	2	2	22	1	2	3	2	2	3	2	2	1	1	1	22	3
8	28	1	3	1	3	3	29	21	8	1	1	2	2	2	10	1	2	3	2	2	2	2	2	1	1	1	22	1
9	39	1	1	1	3	3	30	21	13	1	2	2	2	2	21	1	2	3	2	2	3	2	2	1	1	1	22	1
10	27	1	2	1	2	1	8	9	6	1	1	2	2	2	13	1	2	3	2	3	3	3	3	1	1	1	1	3
11	35	2	3	1	8	3	7	6	4	1	1	2	2	1	14	1	3	3	3	3	3	3	3	1	1	2	0	3
12	27	1	3	1	1	1	8	13	6	1	1	1	1	1	14	1	2	3	3	3	3	3	3	1	1	2	0	3
13	42	1	2	1	8	3	11	3	5	1	1	2	2	2	27	1	2	3	2	3	2	2	3	1	1	1	22	2
14	38	1	2	1	5	3	7	6	4	1	1	2	2	2	24	1	3	3	3	3	3	3	3	1	1	2	0	2
15	45	1	3	1	3	3	11	5	5	1	1	1	1	2	28	1	3	3	2	3	3	3	3	1	1	2	0	3
16	32	1	3	1	2	3	11	3	5	2	2	2	2	2	18	1	2	3	2	2	3	2	2	1	1	1	22	1
17	25	1	2	1	1	3	31	2	13	2	2	1	1	2	1	1	3	3	3	3	2	3	3	1	1	1	3	1
18	36	1	2	1	20	3	10	21	5	2	2	1	1	2	20	1	2	2	3	3	2	3	3	1	1	1	22	2
19	36	2	2	2	1	3	12	3	5	1	2	2	1	2	18	1	2	2	3	3	3	3	2	1	1	1	22	2
20	38	1	2	2	3	3	11	3	5	1	1	2	2	1	25	1	2	2	3	2	3	3	2	1	1	1	22	3
21	44	1	2	1	4	3	29	2	8	1	1	2	2	2	27	2	2	3	2	3	3	3	3	1	1	2	0	3
22	28	1	2	1	5	2	11	18	5	2	1	2	2	2	10	1	3	3	3	3	3	3	3	1	1	2	0	2
23	30	1	3	1	2	3	4	3	2	1	2	2	2	2	15	1	2	3	3	2	3	2	2	1	1	1	22	3
24	42	1	2	1	3	3	29	3	8	1	1	2	2	2	22	1	2	3	2	3	2	2	2	1	1	1	22	3
25	40	1	2	1	5	3	11	3	5	2	2	2	2	2	23	1	2	3	2	2	2	2	2	1	1	1	22	1
26	36	1	2	1	1	2	11	4	5	1	2	2	2	1	20	1	2	3	2	2	2	2	2	1	1	1	22	1
27	45	1	2	1	1	2	12	4	5	1	1	2	2	2	33	1	2	3	2	2	2	2	3	1	1	1	22	2
28	34	1	2	1	2	1	8	10	6	2	1	1	2	2	17	1	2	3	2	2	2	2	2	1	1	1	22	2
29	25	1	2	1	1	1	8	13	6	2	2	2	2	1	12	1	2	3	2	3	3	2	2	1	1	1	22	2
30	25	1	3	1	2	3	10	21	5	2	1	2	2	1	11	1	2	2	2	2	2	2	2	1	1	1	22	1
31	37	1	2	1	1	3	3	1	2	1	1	1	1	2	19	2	2	3	2	2	3	3	3	1	1	1	1	3
32	40	1	2	1	5	1	1	9	1	1	1	2	1	1	30	1	3	3	3	3	3	3	3	1	1	2	0	3
33	32	1	2	1	10	2	1	19	1	2	1	2	2	1	15	1	3	3	2	2	2	3	2	1	1	1	22	4
34	36	1	2	1	1	3	11	3	5	1	1	2	2	2	14	1	2	3	3	3	2	2	2	1	1	1	22	3
35	40	1	2	1	1	2	11	4	5	3	1	2	1	1	20	1	2	3	2	3	3	3	3	1	1	1	1	3
36	35	1	2	1	2	3	3	3	2	1	1	2	2	2	20	1	2	3	2	3	3	3	3	1	1	1	1	3
37	26	1	2	1	1	2	11	4	5	2	1	2	2	2	3	1	3	3	3	3	3	3	3	1	1	2	0	3
38	22	1	2	1	2	3	4	1	2	2	1	2	1	2	5	1	2	3	3	2	3	3	3	1	1	1	1	2
39	31	1	3	1	2	3	3	3	2	3	1	2	1	2	10	1	2	3	2	2	3	2	2	1	1	1	22	2
40	30	1	2	1	5	3	29	21	8	1	1	2	2	2	5	1	1	3	3	3	3	3	3	1	1	2	0	2
41	40	1	2	1	10	3	10	5	5	1	1	2	2	2	22	1	2	2	3	3	2	2	2	1	1	1	22	3
42	35	1	2	1	8	3	8	6	6	1	2	2	2	2	20	1	3	3	3	3	3	3	3	1	1	2	0	4
43	35	3	2	1	2	3	11	3	5	1	2	2	2	2	9	1	2	2	2	2	2	2	2	1	1	1	22	3
44	40	1	2	1	4	1	1	10	1	1	2	2	1	2	25	2	3	3	3	3	3	3	3	1	1	2	0	2
45	33	1	1	1	1	3	32	20	14	1	2	2	2	2	8	1	2	3	3	3	3	3	3	1	1	1	1	1
46	33	1	2	1	3	2	33	18	5	1	2	2	2	2	16	1	2	3	2	2	3	2	2	1	1	1	22	1
47	27	1	2	1	1	1	1	9	1	2	2	2	2	2	8	1	2	3	3	2	2	2	3	1	1	1	22	2
48	34	1	2	3	1	2	3	4	2	2	2	2	2	2	6	1	3	3	3	3	3	2	2	1	1	1	4	4
49	30	1	2	1	1	2	11	18	5	2	2	2	2	2	13	2	2	2	2	2	2	2	2	1	1	1	22	1
50	40	1	2	1	15	3	15	6	9	2	2	2	2	2	10	1	2	3	2	2	3	3	2	2	1	1	22	1

Name	Age	Religion	SES	Occupation	Dur_of Illness	classification	TreatmentHistory	Diagnosis_DSM_IV	DRUGS	CGI_Score	Residence	PMT	Dysmenorrhea	Consanguinity	Dur_of_SexualLife	MenstrualCycleRegularity	Libido	Freq_of_Masturbation	Freq_of_Intercourse	Sex.Responsiveness	Sex.Lubrication	Sex.OrgasmicArousal	Sex.SexualSatisfaction	GPEResult	Sys.Exam	Dysfunc_Status	Dysfunc_Diagnosis	FSFI_Q01
51	30	1	2	1	8	1	2	9	1	2	1	2	2	2	8	1	3	3	3	3	3	3	3	1	1	2	0	3
52	22	1	2	1	1	2	12	16	5	2	2	2	2	2	4	1	3	3	3	3	3	3	3	1	1	2	0	3
53	23	1	3	1	1	1	1	13	1	2	2	1	1	1	6	1	2	3	3	2	3	3	2	1	1	1	22	1
54	35	1	2	1	10	2	10	18	5	3	2	2	2	2	10	1	2	2	2	3	3	2	2	1	1	1	22	2
55	22	1	2	1	1	1	1	13	1	2	2	1	1	1	4	1	3	3	3	3	3	3	3	1	1	2	0	2
56	45	1	2	1	1	2	11	15	5	2	2	2	2	1	23	1	2	3	2	3	3	3	2	1	1	1	22	1
57	30	1	2	3	8	3	24	20	11	1	2	1	1	2	3	1	2	3	3	3	3	2	2	1	1	1	22	3
58	21	1	2	1	4	3	11	3	5	2	1	1	1	2	10	1	2	3	2	2	3	3	2	1	1	1	22	3
59	33	1	3	1	4	3	10	1	5	3	1	2	2	2	20	1	2	3	2	2	2	2	2	1	1	1	22	2
60	39	1	2	1	7	1	8	9	6	2	1	1	1	1	20	1	1	3	3	3	3	3	3	1	1	2	0	4
61	45	1	2	1	1	2	12	16	5	1	1	1	1	2	22	1	2	2	3	3	3	3	3	1	1	1	1	3
62	27	1	2	1	1	1	1	9	1	2	2	2	2	2	8	1	2	3	3	2	2	2	3	1	1	1	22	2
63	25	1	3	2	7	1	1	9	1	1	1	2	2	2	11	2	2	2	2	2	2	2	2	1	1	1	22	2
64	29	1	2	1	8	1	34	9	8	1	2	1	1	2	10	1	2	3	2	3	2	2	2	1	1	1	22	3
65	25	1	1	1	6	3	11	1	5	1	1	2	2	2	11	1	3	3	3	3	3	3	3	1	1	2	0	3
66	31	1	2	1	2	2	12	4	5	3	1	2	2	2	13	2	2	3	2	2	3	3	2	1	1	1	22	2
67	30	1	2	1	10	1	29	9	8	2	2	2	2	2	8	1	2	3	3	2	2	2	2	1	1	1	22	1
68	29	1	2	1	3	1	1	9	1	1	1	2	2	2	16	1	2	2	2	3	2	2	3	1	1	1	22	3
69	32	1	3	1	6	3	3	3	2	2	1	2	2	2	20	1	3	3	3	3	3	3	3	1	1	2	0	3
70	26	1	2	1	2	1	1	12	1	3	2	2	2	2	7	1	3	3	3	3	3	3	3	1	1	2	0	2
71	21	1	2	1	4	1	3	12	2	3	1	2	2	1	4	1	2	2	2	2	3	3	3	1	1	1	22	2
72	31	1	3	1	2	3	3	3	2	2	1	1	1	1	13	1	2	3	2	2	2	2	2	1	1	1	22	1
73	27	1	2	1	1	3	35	2	11	1	1	2	2	1	10	1	2	3	2	3	3	3	3	1	1	1	1	2
74	20	1	2	1	1	1	1	13	1	2	2	2	2	1	2	2	2	2	3	3	2	3	3	1	1	1	8	3
75	38	2	2	2	4	1	2	9	1	2	2	2	2	2	16	1	3	3	3	3	3	3	3	1	1	2	0	5
76	24	1	2	1	3	3	11	5	5	1	2	1	1	2	1	1	3	3	3	3	3	3	3	1	1	2	0	2
77	42	1	2	1	2	3	11	5	5	1	2	2	2	1	24	1	3	3	2	3	2	3	3	1	1	1	3	2
78	32	1	2	1	8	3	21	8	12	1	2	2	2	2	21	1	2	3	2	3	3	3	3	1	1	1	1	3
79	40	1	2	1	6	3	3	21	2	1	2	2	2	2	17	1	3	3	3	2	3	3	3	1	1	1	1	3
80	23	2	2	1	3	3	10	21	5	2	2	2	2	2	17	1	1	3	3	3	3	3	3	1	1	2	0	3
81	32	1	2	3	4	2	4	4	2	1	2	2	2	1	12	1	1	3	3	3	3	3	3	1	1	2	0	3
82	24	1	2	1	2	3	5	21	2	1	2	2	2	2	7	1	3	3	3	3	3	3	3	1	1	2	0	1
83	34	2	3	1	3	2	10	16	5	1	2	1	1	1	20	1	3	3	3	3	3	3	3	1	1	2	0	3
84	26	1	2	1	5	3	15	7	9	1	2	2	2	2	8	1	2	2	2	2	3	2	2	1	1	1	22	3
85	35	1	2	1	6	3	10	5	5	1	1	2	2	2	20	2	3	3	3	3	3	3	3	1	1	2	0	3
86	45	1	2	1	1	3	11	3	5	1	1	2	2	1	26	1	3	3	3	3	3	3	3	1	1	2	0	4
87	35	1	2	1	1	3	13	1	5	2	2	2	2	1	25	1	3	3	3	3	3	3	3	1	1	2	0	4
88	37	2	2	1	5	3	11	5	5	2	2	1	1	2	18	1	2	3	2	2	2	2	3	1	1	1	22	2
89	45	1	2	3	1	3	11	1	5	1	1	2	1	2	28	1	2	2	2	3	3	3	3	1	1	1	22	3
90	35	1	2	1	2	3	3	1	2	2	1	2	2	2	21	2	1	3	1	3	2	3	3	1	2	1	3	3
91	26	1	2	1	7	1	29	12	8	2	1	2	2	1	12	1	1	3	3	3	3	2	3	1	1	1	4	3
92	34	1	1	2	5	2	3	18	2	1	2	1	1	2	8	1	2	3	2	2	3	3	2	1	1	1	22	2
93	27	1	2	1	1	2	11	18	5	2	2	2	2	2	6	1	1	3	1	3	3	3	3	1	1	2	0	4
94	41	1	2	1	12	2	11	18	5	1	1	2	2	2	26	2	2	3	2	2	3	2	3	1	1	2	0	1
95	42	1	2	1	4	3	4	3	2	1	2	2	2	2	24	1	2	3	3	2	2	3	3	1	1	1	1	3
96	30	1	2	1	1	3	35	2	13	2	2	2	2	2	8	1	2	3	2	3	2	3	3	1	1	1	8	3
97	45	2	2	1	5	3	29	21	8	2	2	2	2	1	27	2	2	2	2	2	2	2	2	1	1	1	22	1
98	28	1	2	3	1	2	10	16	5	2	2	2	2	1	10	1	3	3	3	3	3	3	3	1	1	2	0	3
99	37	2	3	1	12	1	1	12	1	2	2	2	2	2	20	1	2	2	2	2	2	2	2	1	1	1	22	3
100	41	1	1	1	5	3	11	3	5	2	2	1	2	2	23	1	2	3	2	2	2	3	3	1	1	1	22	2
101	20	1	3	1	1	3	11	3	5	1	1	2	2	2	2	2	2	3	3	2	2	2	2	1	1	1	22	1

Name	FSFI_Q 02	FSFI_Q 03	FSFI_Q 04	FSFI_Q 05	FSFI_Q 06	FSFI_Q 07	FSFI_Q 08	FSFI_Q 09	FSFI_Q 10	FSFI_Q 11	FSFI_Q 12	FSFI_Q 13	FSFI_Q 14	FSFI_Q 15	FSFI_Q 16	FSFI_Q 17	FSFI_Q 18	FSFI_Q 19	Total	LIST	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain
1	3	2	3	3	3	3	4	5	5	5	4	4	4	4	5	5	5	5	75	3	6	11	17	13	13	15
2	1	1	2	1	1	1	5	1	5	1	2	5	4	2	5	5	5	5	53	4	2	5	12	8	11	15
3	3	2	3	3	2	1	1	1	1	2	1	1	4	2	2	3	4	4	43	1	6	10	4	4	8	11
4	3	4	4	3	5	5	5	3	5	5	5	5	5	5	4	5	5	3	82	2	6	16	18	15	14	13
5	3	4	4	4	3	4	5	5	5	3	5	4	4	4	4	5	5	1	75	2	6	15	19	12	12	11
6	3	3	2	2	2	2	2	2	2	3	4	4	4	4	4	4	4	3	57	1	6	9	8	11	12	11
7	3	2	3	3	2	2	5	4	5	5	5	3	5	3	5	5	5	3	71	1	6	10	16	13	13	13
8	3	5	2	3	5	1	4	1	5	2	3	4	4	3	3	5	5	4	63	3	4	15	11	9	10	14
9	1	2	3	3	5	3	5	5	5	5	5	1	2	3	4	5	5	4	67	3	2	13	18	11	9	14
10	1	2	3	3	5	3	5	2	4	3	4	4	5	4	4	5	5	4	69	2	4	13	14	11	13	14
11	3	4	3	4	4	5	5	1	2	4	4	4	5	5	5	5	5	3	74	4	6	15	13	12	15	13
12	3	2	3	4	2	5	4	5	5	5	4	5	5	5	5	4	5	3	77	2	6	11	19	14	15	12
13	2	2	2	3	3	3	4	3	4	4	4	4	5	5	4	4	3	4	65	1	4	10	14	12	14	11
14	3	4	3	4	5	4	5	5	5	4	5	5	5	5	5	5	5	3	82	4	5	16	19	14	15	13
15	3	3	3	4	3	5	5	5	5	4	4	4	3	4	5	5	5	3	76	1	6	13	20	12	12	13
16	1	1	1	0	1	0	0	0	0	1	0	0	2	3	3	0	0	5	19	1	2	3	0	1	8	5
17	2	5	3	3	3	2	2	1	2	4	1	4	3	5	2	3	2	3	51	3	3	14	7	9	10	8
18	2	3	3	4	5	3	3	4	5	4	5	4	2	4	4	5	4	4	70	1	4	15	15	13	10	13
19	3	2	3	3	2	5	5	5	3	4	3	3	4	4	2	4	5	3	65	1	5	10	18	10	10	12
20	3	3	2	3	2	4	2	4	5	3	3	4	4	4	4	3	4	3	63	1	6	10	15	10	12	10
21	3	2	3	4	2	2	3	3	5	3	5	5	5	5	5	5	5	3	71	3	6	11	13	13	15	13
22	3	4	5	3	4	4	5	3	1	4	1	5	5	5	5	4	4	3	70	1	5	16	13	10	15	11
23	2	2	2	1	2	5	2	5	2	2	5	4	4	4	4	5	5	5	64	1	5	7	14	11	12	15
24	3	2	3	3	3	5	4	2	4	4	5	5	4	5	5	4	4	3	71	3	6	11	15	14	14	11
25	1	2	2	2	2	2	3	2	3	2	3	4	4	2	1	3	2	4	45	1	2	8	10	9	7	9
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28	2	2	2	2	2	3	4	3	4	3	4	4	3	4	4	2	4	4	58	2	4	8	14	11	11	10
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32	3	2	3	5	5	5	4	5	3	5	3	5	4	4	5	3	3	3	73	2	6	15	17	13	13	9
33	4	3	4	2	4	3	4	3	4	3	4	4	4	4	4	4	5	4	71	2	8	13	14	11	12	13
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36	3	2	3	3	2	5	5	5	5	3	3	5	4	4	4	5	5	4	73	1	6	10	20	11	12	14
37	2	5	4	5	3	5	2	4	5	3	3	5	5	5	5	1	5	3	73	1	5	17	16	11	15	9
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39	2	2	2	3	3	4	4	3	2	2	4	2	2	2	4	2	2	4	53	1	4	10	13	8	8	8
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42	4	4	4	4	4	4	5	1	5	5	5	5	5	5	5	5	5	2	81	2	8	16	15	15	15	12
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47	2	2	2	2	3	2	4	3	4	3	3	4	5	4	4	4	4	3	60	2	4	9	13	10	13	11
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49	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	5	9	1	2	0	0	0	2	5
50	2	1	1	1	1	1	4	2	4	1	4	4	1	4	1	5	5	4	47	4	3	4	11	9	6	14

Name	FSFI_Q 02	FSFI_Q 03	FSFI_Q 04	FSFI_Q 05	FSFI_Q 06	FSFI_Q 07	FSFI_Q 08	FSFI_Q 09	FSFI_Q 10	FSFI_Q 11	FSFI_Q 12	FSFI_Q 13	FSFI_Q 14	FSFI_Q 15	FSFI_Q 16	FSFI_Q 17	FSFI_Q 18	FSFI_Q 19	Total	LIST	Desire	Arousal	Lubrication	Orgasm	Satisfaction	Pain
51	3	4	4	4	3	4	5	5	5	3	5	4	4	4	4	5	5	1	75	2	6	15	19	12	12	11
52	3	5	3	5	5	5	5	3	5	5	4	4	4	4	4	4	4	4	84	1	6	18	18	13	12	12
53	1	1	3	2	2	5	5	5	5	5	5	4	4	4	4	3	3	3	65	2	2	8	20	14	12	9
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62	2	2	2	2	3	2	4	3	4	3	3	4	5	4	4	4	4	3	60	2	4	9	13	10	13	11
63	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	5	11	2	3	0	0	0	3	5
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67	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	4	4	4	27	3	2	3	4	3	3	12
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74	3	4	4	5	3	2	4	5	2	4	4	5	3	3	3	5	4	4	70	2	6	16	13	13	9	13
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93	3	4	4	5	4	4	4	4	4	4	4	4	3	4	4	4	4	2	73	1	7	17	16	12	11	10
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101	1	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	5	11	1	2	0	0	0	4	5