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# A COMPARATIVE STUDY OF SEXUAL DYSFUNCTION INDUCED BY ANTI-PSYCHOTICS AND ANTIDEPRESSANTS IN DRUG NAIVE PATIENTS

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**Abstract:**

**Introduction:** Human sexuality' is described as individual's own sexual interest and attraction to others, also accounts for one's capacity to have erotic experiences and responses, based on their sexual orientation. The concept of sexuality has evolved over the years. It is also studied under a variety of disciplines. The term "normalcy" in sex varies between individuals of same gender and across culture. The description of sexual response cycle to both male and female are different. The understanding about sexual scripting and courtship behaviour throws further light on human sexuality. Now-a-days sexual functioning is not seen as only a part of procreation.

**Materials and Methods:** Patients diagnosed with first episode psychosis and depression or anxiety are started on antipsychotics and antidepressants respectively. The patients who attain remission in 6-8 weeks of treatment are taken into the study. Selection will be done by random sampling method. Patients satisfying the inclusion and exclusion criteria will be chosen for the study. Patients will be explained about the nature of the study. After getting informed consent, patients will be interviewed and details will be collected as per socio demographic proforma. Sexual functioning of patients both before and after drug use are collected through appropriate scales- changes in sexual functioning questionnaire (male and female versions of scale available). After which the relationship between socio demographic variables, illness related variables and sexual functioning are studied. The results are statistically analysed and final conclusion arrived at.

**Results:** Vast majority of patients fall in the age group between 21-30 years of age (38.7%), followed by 31-40 years of age (32.7%). Female patients (53.6%) constitute a higher proportion than male patients (46.4%). the subset of patients belonging to the group 'not applicable' are males, excluding which majority of female patients have regular menstrual cycles (39.9%). patients on tablet escitalopram are the highest (31%) and the least is contributed by tablet haloperidol (14.2%). Cumulatively, patients on antidepressants (60.8 %) are higher than patients on antipsychotics (39.3%). There is no much differences between number of patients in antidepressants group between (escitalopram and sertraline) but in antipsychotic group – the difference almost/ nearly doubles between risperidone and haloperidol group. This is because, haloperidol is not the preferred as a first line drug in first episode psychosis for various reasons.

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**Conclusion:** From the study, it is noted that, there is a decline in sexual functioning after use of antipsychotics and antidepressants which mainly depends on baseline sexual functioning, dose of drug and type of drug. The decline in sexual functioning (drug induced) is often less than 50% scores in sexual functioning domains. For individuals with higher baseline scores in sexual functioning domains, experience less or no dysfunction with minimal effective doses. Patients with higher baseline sexual functioning report decline is sexual satisfaction than before, but their scores do not correlate to sexual dysfunction. With maximum doses of individual drug, sexual dysfunction is obvious.

**Key Words:** Human sexuality, questionnaire, sexual dysfunction, escitalopram and Sertraline.

## INTRODUCTION

'Human sexuality' is described as individual's own sexual interest and attraction to others, also accounts for one's capacity to have erotic experiences and responses, based on their sexual orientation. The concept of sexuality has evolved over the years. It is also studied under a variety of disciplines. The term "normalcy" in sex varies between individuals of same gender and across culture.[1] The description of sexual response cycle to both male and female are different. The understanding about sexual scripting and courtship behaviour throws further light on human sexuality. Now-a-days sexual functioning is not seen as only a part of procreation. This changing view towards sex has brought its growth under variety of disciplines. Sexual dysfunction is always as a 'taboo', from the era of Hippocrates to till date. Seeking help for such dysfunction, has brought a view on it to be curable and not to be stigmatised. The stigma associated with this, has made many myths deep rooted in society. In relevance to psychiatry, one such myth is all psychiatric drugs completely impair one's sexual functioning. But on the contrary, some don't have such effects or have minimal effects.[2]

Moreover, neuroendocrine changes involving the luteinizing hormone (LH) and the follicle-stimulating hormone (FSH), as well as long-term high prolactin blood levels and low testosterone, also play a part on antipsychotics, causing SD, whether directly or indirectly.[3] Finally, neural nitric oxide (NO) has been known to also regulate sexual behavior and erectile function, and its expression in the hypothalamus could be potentially blocked by some antipsychotics.[4]

SD may cause diverse clinical alterations, such as low libido, difficulties in ejaculation, difficulties reaching orgasm, erection and vaginal lubrication, as well as menstrual alterations or gynecomastia. These alterations are mostly reversible with treatment discontinuation, except for priapism, which can require surgical intervention in some cases.[5]

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## MATERIALS AND METHODS

### Inclusion Criteria

• Patients must satisfy a diagnosis in ICD-10, which falls under psychotic spectrum disorders (cases generally taken are only first episode psychosis), depression and anxiety.

• Remission in the disease, indicated by fall in scores in appropriate scales pertaining to that disease.

• From 18 years of age

• Sexually active

• Monotherapy for 6 weeks

• Both males and female

### Exclusion Criteria

• Poly pharmacy with other antipsychotics and antidepressants

• Co morbid medical illness

• Co morbid psychiatric illness

### OUTCOME OF THE STUDY

• A comparison of sexual functioning in patients before and after medication (antipsychotics, antidepressants) use

• The prevalence of treatment emergent sexual dysfunction

• An association of socio demographic details like age, gender, marital status, socioeconomic status and employment status with sexual functioning

• An association of illness related factors like diagnosis, type of drug, dose of drug and family history of mental illness with sexual functioning

• An association of type of drug, dose of drug and its effects on various phases of sexual dysfunction

**Duration of study:** one year

### METHODOLOGY

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1. Patients diagnosed with first episode psychosis and depression or anxiety are started on antipsychotics and antidepressants respectively.
2. The patients who attain remission in 6-8 weeks of treatment are taken into the study. Selection will be done by random sampling method.
3. Patients satisfying the inclusion and exclusion criteria will be chosen for the study.
4. Patients will be explained about the nature of the study.
5. After getting informed consent, patients will be interviewed and details will be collected as per socio demographic proforma.
6. Sexual functioning of patients both before and after drug use are collected through appropriate scales- changes in sexual functioning questionnaire (male and female versions of scale available).
7. After which the relationship between socio demographic variables, illness related variables and sexual functioning are studied.
8. The results are statistically analysed and final conclusion arrived at.

**DESCRIPTIVE STATISTICS:**

Total no of cases: 168

Total no. of individuals (from general population): 55

Total = 168+55= 223

**Statistical Analysis**

• IBM SPSS version 21 used. Descriptive statistics like frequency and percentage was used.

• Inferential statistics like chi-square test was used for association.

**SCALES**

• Changes in sexual functioning questionnaire (CSFQ) – male and female

• Hamilton rating scale for depression (HAM-D)

• Hamilton rating scale for anxiety (HAM-A)

• Brief psychiatric rating scale (BPRS).

## RESULTS

From the above table, vast majority of patients fall in the age group between 21-30 years of age (38.7%), followed by 31-40 years of age (32.7%).

| Age Group | No of patients | Percentage |
|---|---|---|

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| | | |
|---|---|---|
| 19-20 years | 5 | 6 |
| 21-30 years | 32 | 38.7 |
| 31-40 years | 28 | 32.7 |
| 41-50 years | 12 | 14.3 |
| 51-60 years | 7 | 8.3 |
| Total | 84 | 100 |

**Table 1: Age wise distribution**

| Gender | No of patients | Percentage |
|---|---|---|
| Male | 39 | 46.4 |
| Female | 45 | 53.6 |
| Total | 84 | 100 |

**Table 2: Gender Distribution**

From the above table, female patients (53.6%) constitute a higher proportion than male patients (46.4%).

| Marital status | No of patients | Percentage |
|---|---|---|
| Married | 69 | 81.5 |
| Unmarried | 15 | 18.5 |
| Total | 84 | 100 |

**Table 3: Marital status**

| Menstrual status | No of patients | Percentage |
|---|---|---|
| Regular | 33 | 39.9 |
| Irregular | 1 | 1.2 |
| Premenopausal | 5 | 6.0 |
| Menopause | 5 | 6.5 |
| Not Applicable | 40 | 46.4 |
| Total | 84 | 100 |

**Table 4: Menstrual status**

From the above table, the subset of patients belonging to the group ‘not applicable’ are males, excluding which majority of female patients have regular menstrual cycles (39.9%).

| Family History | No of patients | Percentage |
|---|---|---|
| Present | 11 | 13.1 |
| Absent | 73 | 86.9 |
| Total | 84 | 100 |

**Table 5: Family History**

From the above table, the majority of patients did not have any family history of mental illness (86.9%).

| Diagnosis | No of patients | Percentage |
|---|---|---|

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| | | |
|---|---|---|
| First episode psychosis | 33 | 39.3 |
| Depression | 38 | 45.2 |
| Anxiety | 13 | 15.5 |
| Total | 84 | 100 |

**Table 6: Diagnosis**

From the above table, the subgroup of patients with depression are higher (45.2%) followed by first episode psychosis (39.3%).

| Drug | No of patients | Percentage |
|---|---|---|
| Haloperidol | 12 | 14.2 |
| Risperidone | 21 | 25 |
| Escitalopram | 26 | 31 |
| Sertraline | 25 | 29.8 |
| Total | 84 | 100 |

**Table 7: Type of drug**

From the above table, patients on tablet escitalopram are the highest (31%) and the least is contributed by tablet haloperidol (14.2%). Cumulatively, patients on antidepressants (60.8 %) are higher than patients on antipsychotics (39.3%). There is no much differences between number of patients in antidepressants group between (escitalopram and sertraline) but in antipsychotic group – the difference almost/ nearly doubles between risperidone and haloperidol group. This is because, haloperidol is not the preferred as a first line drug in first episode psychosis for various reasons.

| Before drug use | No of patients | Percentage |
|---|---|---|
| No sexual dysfunction | 69 | 82.1 |
| Sexual dysfunction | 15 | 17.9 |
| Total | 84 | 100 |

**Table 8: Sexual functioning before drug use**

Before initiation of drug treatment, scores suggestive of no sexual dysfunction in majority of Patients (82.1%), scores suggestive of sexual dysfunction in patients in late 4 th decade and 5 th decade even before drug treatment, indicating age related decline in sexual functioning, in which females are either premenopausal or in menopause.

| After drug use | No of patients | Percentage |
|---|---|---|
| **No changes** | **15** | **17.9** |
| No sexual dysfunction | 08 | 9.5 |
| Sexual dysfunction | 61 | 72.6 |
| Total | 84 | 100 |

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**Table 9: Sexual functioning after drug use**

From the above table, after drug initiation sexual dysfunction were reported in majority (72.6%).

| Domain | No of patients | Percentage |
|---|---|---|
| No delayed ejaculation | 25 | 30.3 |
| delayed ejaculation | 14 | 16.1 |
| Not Applicable | 45 | 53.6 |
| Total | 84 | 100 |

**Table 10: Delayed Ejaculation**

From the above table, reporting of 'Delayed Ejaculation' after drug use constitutes 16.1%. To be accurate, men reporting delayed ejaculation is 34.6 % (percentage calculated with exclusion of female patients). The delayed ejaculation is reported with antidepressants, not with antipsychotics.

## DISCUSSION

The study was aimed to assess the prevalence of drug induced sexual dysfunction and factors associated with it, as sexual side effects was identified as one of the reasons for drug discontinuation (promoting relapse) and reduced quality of life. The study was also aimed to look at the correlation between sociodemographic variables (age, gender, marital status, menstrual status, employment socioeconomic class), illness variables (diagnosis, family history of mental illness, type of drug, dose of particular drug) and sexual functioning (pre and post drug use).[6]

Age plays an important role in defining baseline sexual functioning, sexual needs, sexual satisfaction and their scheduling (frequency, sexual fantasies, sexual stimuli). As age increases, the frequency of sexual activity is reduced due to various factors. Hence, baseline sexual functioning varies with each age group. In females, it even more correlates with their menstrual status. Female in perimenopausal (pre- menopause & menopause) group report decline in sexual needs and functioning. Also, report lubrication and pain issues than earlier. Scores correlated to sexual dysfunction for women, in or above 4 th decade. Men too report, higher the age, lesser the sexual functioning.[7]

In patients with anxiety disorder, who experience ejaculatory delay due to antidepressants, report sexual satisfaction better after drug intake. More often patients with anxiety disorder, have acquired premature ejaculation as a part of their illness. Due to antidepressants intake, the delay corrects their premature ejaculation, as a result of which they report better sexual satisfaction.

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Painful orgasm and experiencing a loss in interest after arousal following drug use is rarely reported.[8]

The percentage of medication induced sexual dysfunction with in each drug groups- haloperidol, risperidone, escitalopram, sertraline is found to be 50%, 59.5%, 94.2%, 72% respectively, in this study. On an average reported to be 72.6 % (122 out of 168 remitted patients) among four drugs. Strictly considering patients with no sexual dysfunction prior to drug use with sexual dysfunction after drug use 61.3%. The above- mentioned discrepancy in percentage is because of inclusion of patients from 4 th and 5 th decade, whose baseline sexual functioning varies.[9,10]

## CONCLUSION

From the study, it is noted that, there is a decline in sexual functioning after use of antipsychotics and antidepressants which mainly depends on baseline sexual functioning, dose of drug and type of drug. The decline in sexual functioning (drug induced) is often less than 50% scores in sexual functioning domains. For individuals with higher baseline scores in sexual functioning domains, experience less or no dysfunction with minimal effective doses. Patients with higher baseline sexual functioning report decline is sexual satisfaction than before, but their scores do not correlate to sexual dysfunction. With maximum doses of individual drug, sexual dysfunction is obvious. Each drug affects a particular prototype neurotransmitter, but the dysfunction is not related to particular phase of sexual functioning. Delay or changes in one phase, in turn disturbs the upcoming phases. Changes in one neurotransmitter also disturbs the neural balance of another neurotransmitter which contributes to sexual dysfunction too. So, drug induced single phase specific dysfunction could not be established.

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