SEXUAL DYSFUNCTION AND TREATMENT COMPLIANCE AMONG PATIENTS TAKING ANTIPSYCHOTIC MEDICATIONS AT PSYCHIATRY UNIT IN MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM, TANZANIA

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By

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A Dissertation Submitted in (Partial) Fulfilment of the Requirements for the Degree of Master of Science in Nursing Mental Health of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled ***Sexual Dysfunction and Treatment Compliance among Patients Taking Antipsychotic Medications at Psychiatry Unit in Muhimbili National Hospital Dar es Salaam, Tanzania*** in (partial) fulfillment of requirements for the degree of Master of Science Nursing (Mental Health) of Muhimbili University of Health and Allied Sciences.

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DECLARATION AND COPYRIGHT

I, **Shamila Khalid,** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature……..... **Date……**

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I sincerely appreciate my father, Mr. Khalid Mwanga and my mother Hawa Mwanga for their love and prayers. Their encouragement made a great difference in my life especially during hard moments.

Finally, I thank the Almighty God for giving me good health and power throughout my study.

DEDICATION

This dissertation is dedicated to my lovely family, in particular my understanding and caring husband, Amour Seleman and to our children Sheila, Fadhila and Fadhili. It is also dedicated to my parents who inspired me right from childhood to study hard and become a good nurse.

ABSTRACT

Background: Sexual side-effects of antipsychotic medications may be an important cause of non- compliance to medications. Therefore understanding the prevalence of sexual dysfunction and effect on compliance to antipsychotics treatment is important because knowing the magnitude of the antipsychotics induced sexual dysfunction and its effects may contribute to the planning for improving proper management of SD in patients.

Objective: To determine prevalence of Sexual Dysfunction and its effect on treatment compliance among patients taking antipsychotic medications at Psychiatric Out-patient clinic in Muhimbili National Hospital.

Methods: This was a cross sectional study that took a snapshot of situation during a period of data collection. A total of 426 participants taking antipsychotic medications attending the psychiatric clinic were recruited. Standard structured questionnaire was used for interview where by the psychotropic related sexual dysfunction Questionnaire (PRSexDQ) was used - after being translated into Kiswahili language. Data were collected by the researcher and two research assistants and analyzed using computer software with SPSS version 20.

For continuous variables (e.g. age) the mean, range, and standard deviation was used; categorical variables (e.g., gender) was described by absolute and relative frequencies. Sexual dysfuncton was defined as having a score equal to or greater than 1 in any of the four items of the PRSexDQ that evaluated the various dimensions of the sexual function. The potential relationship between some demographic and clinical variables (i.e., age, sex, medications and treatment duration) and the presence of sexual dysfunction was investigated using a logistic regression analysis and all comparisons were considered significant if $P < 0.05$.

Results: Overall (63.8%) of the participants exhibited sexual dysfunction according to the assessment with PRSexDQ. Sexual dysfunction was common in both sexes with females exhibiting high prevalence of SD, 78.3% than males 57.6% (X^2=16.92, P<0.001). Sexual dysfunction seems to increase as duration of treatment gets longer. Males participants found

with higher rates of poor tolerance to the antipsychotic medications 69.7% compared to females 30.3%. Also 72.3% and 27.7% of males and females respectively stopped taking antipsychotic medications for sometimes due to fear of the side effects of medications on sexual dysfunction.

Conclusion and Recommendations: This study showed that the prevalence of Sexual dysfunction was high in participants taking antipsychotics especially in long term treatment. All types of antipsychotics are associated with development of SD. The findings of this study may expand previous data especially on the prevalence and impact on compliance to antipsychotic medication in Tanzania. Therefore, there is a need to consider sexual dysfunction during management of patients taking antipsychotic medication.

ABBREVIATIONS

HP	Hyperprolactinemia
MNH	Muhimbili National Hospital
MOHSW	Ministry of Health and Social Welfare
MUHAS	Muhimbili University of Health and Allied Sciences
OPC	Outpatient Clinic
PRSexDQ	Psychotropic Related Sexual Dysfunction Questionnaire
SD	Sexual dysfunction

DEFINITION OF TERMS

Sexual dysfunction: refers to a problem during any phase of the sexual response cycle that prevents the individual or couple from experiencing satisfaction from the sexual activity. The sexual response cycle has four phases: excitement, plateau, orgasm, and resolution.

Erectile dysfunction (ED): The inability to achieve and/or maintain an erection sufficient to permit satisfactory sexual intercourse.

Ejaculate: The ejection of semen from the penis (or the feeling of this).

Sexual desire (libido): A feeling that may include wanting to have a sexual experience (for example, masturbation or intercourse).

Orgasm: The peak of the sexual excitement.

Antipsychotics: A group of medicines that are mainly used to treat mental health illnesses.

Typical antipsychotics: A class of antipsychotic drugs first developed in the 1950s and used to treat psychosis.

Atypical antipsychotics: Antipsychotic agents that have a pharmacological profile different from older or typical antipsychotic medications

Compliance in this study describes the degree to which a patient correctly adheres to treatment.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Proper sexual functioning is one of the most important components of quality of life and of maintaining a satisfying intimate relationship (Zemishlany & Weizman, 2008); (Chiesa, 2013). Sexual dysfunction (SD) however is increasingly becoming a medical phenomenon of concern in particular among patients taking antipsychotic medication (Chiesa, 2013) This is due to the reason that antipsychotics affect neurotransmitter leading to erectile dysfunction and abnormal ejaculation (Cutler, 2003, Haddad & Wieck, 2004 and Baggaley, 2008) as well as impaired desire and arousal (Chiesa, 2013). Sexual dysfunction has been considered by many schizophrenia patients as the more troublesome side effect compared to the others, (Baggaley, 2008).

Sexual side-effects of medication may be an important cause of non- adherence to medication (Smith, 2002). It is essential to sustain compliance on patients taking anti-psychotics as they may discontinue taking a prescribed medication if they discover that they are unable to have a natural sexual life because of it (Bains & Shah, 2012). Therefore, appropriate intervention should be done for these patients if sexual dysfunction is recognized. Proper management strategies should be planned like decreasing dose of the agent causing the sexual dysfunction, symptomatic therapy, such as use of adjunctive therapy, such as sildenafil and switching to other antipsychotic drug meant to be less likely to cause SD (Nunes, Moreira, Razzouk, Nunes, & Mari, 2012). It is recommended that psychiatrists should ask patients about their sexual function both before and following the initiation of treatment in order to improve therapeutic outcome (Baggaley, 2008).

Although, antipsychotic induced sexual dysfunction has been reported widely, information on prevalence and compliance to medication among patients taking antipsychotic is rare especially in low income countries like Tanzania. The information is also limited on whether sexual dysfunction is considered when an antipsychotic is given and consequently appropriate actions are taken to sufferers. This study therefore will establish prevalence of antipsychotic

induced sexual dysfunction and compliance to medication among patients taking antipsychotics at the psychiatric unit at Muhimbili National Hospital (MNH) in Tanzania.

1.2 Problem statement

Sexual dysfunction is a common condition in patients taking antipsychotics, and is the most bothersome symptom to patients resulting in a negative effect on treatment compliance (Yeon al., 2012). Non compliance to medication in turn may lead to relapse, and is one of the major contributing factor for high hospitalization rates and a subsequent increase in hospital operational costs (Almond et al., 2004). Although there is no universal guideline on management of antipsychotic induced sexual dysfunction, there are several alternative management strategies, for example, taking drug holidays, reducing the dosage, switching to another antipsychotic medication that has less likelihood of causing sexual dysfunction and the use of adjunctive treatment (Berner et al., 2007). All that is required is for psychiatrists to purposely request patients sexual dysfunction information before and after the initiation of treatment with antipsychotics. Despite advances in understanding of antipsychotic induced sexual dysfunction and its management, the prevalence and its impact on compliance to medication has not been studied in Tanzania. It is in the light of the above that this study to assess sexual dysfunction and treatment compliance among patients taking antipsychotic medications at psychiatry unit in Muhimbili National Hospital, Dar es salaam, Tanzania was undertaken.

1.3 Rationale

Results of this study will increase knowledge and understanding of the magnitude of the problem. This may guide prescription of antipsychotic medications in the at-risk population and improve treatment adherence. Also when the magnitude of the problem due to sexual dysfunction among patients taking antipsychotic medications is known, it will be easier to recommend and justify appropriate measures to be taken to minimize the problem. Moreover by knowing the prevalence and effect on compliance to medication may contribute to planning for improvement of nursing practice and care particularly by fostering a more positive self-

esteem for the patient. Further more, it influences patient-partner relationship by encouraging patients to talk about feelings and fears of how treatment may affect their sexuality.

1.4 Research Questions

- What proportion of patients taking antipsychotic medications has developed sexual dysfunction (SD)?
- What is the relationship between types of antipsychotics and the development of Sexual dysfunction?
- What is the relationship between duration of treatment with antipsychotic medication and development of Sexual dysfunction?
- Is there any association between compliance to antipsychotic medication and Sexual dysfunction?

1.5 Objectives

1.5.1 Broad objective

To determine the prevalence of Sexual dysfunction and its effect on treatment adherence in patients taking antipsychotic medications at out-patient clinic in MNH

1.5.2 Specific objectives

1. To determine the prevalence of Sexual dysfunction among patients taking antipsychotic medications
2. To assess the effect of antipsychotic induced Sexual dysfunction on compliance to medications
3. To determine the relationship between treatment duration of using antipsychotic and subsequent development of Sexual dysfunction
4. To assess the relationship between types of antipsychotic medication (typical and atypical) and the development of Sexual dysfunction

1.6 Conceptual Frame Work

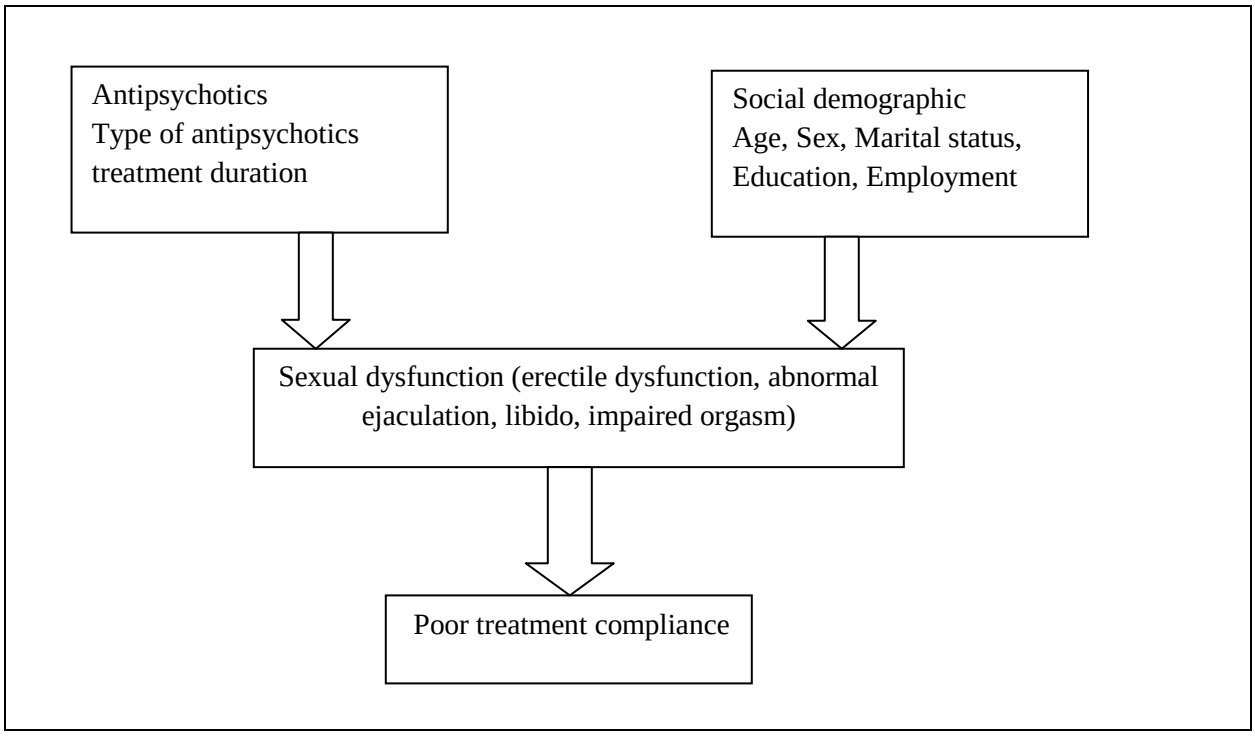

Figure 1: Conceptual Framework

To guide designing of this study I developed the conceptual framework. As seen in figure 1, the framework was developed on basis of biological views as discussed in several literatures reviewed and summarized in chapter 2. The conceptual framework demonstrates that an individual with a psychiatric illness taking antipsychotic medication can develop sexual dysfunction leading to non compliance with prescribed treatment. It furthermore demonstrates that effect of antipsychotic depend on treatment duration. The framework also demonstrates that sexual dysfunction depends on demographic characteristics like age, sex, education, employment and marital status. This conceptual framework in general indicates relationship between dependent and independent variables of the research problem studied.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Prevalence of Sexual dysfunction among patients taking antipsychotics

Compared to the general population, the prevalence rate of Sexual dysfunction is higher among individuals taking antipsychotic medication. Mosaku and Ukpong (2009) reported a prevalence of 86.5% of individuals with sexual dysfuction among those taking antipsychotics which was significantly higher compared to a prevalence of 43.8% found in a community study by Fatusi et al., (2011). The studies above were done in Nigeria where the findings suggest that medication may have predisposed individuals taking antipsychotics to developing SD.

A study conducted by Fujji et al. (2010) from Japan on schizophrenic patients using antipsychotic medications involving 352 schizophrenic outpatients treated with antipsychotics and 367 healthy subjects, the study results demonstrated that, the prevalence of sexual dysfunction in individual with schizophrenia was 59.3% for males and 49.1% for females. Montejo et al., (2010) from Spain conducted similar study and found that overall 46% of the patients exhibited sexual dysfunction, where as 50% of those were males, 37% were females.

2.2 Type of Antipsychotics and Rates of Sexual Dysfunctions

Both typical and atypical antipsychotics are associated with a substantial impairment of sexual functioning, (Baggaley, 2008; Serretti & Chiesa, 2011). A previous study has revealed that individual with schizophrenia treated with atypical antipsychotic drugs have fewer SD complains than those treated with typical antipsychotics. It is further reported that risperidone has the highest impact on sexual dysfunction followed by haloperidol, then olanzapine, clozapine, quetiapine and, lastly aripiprazole (Baggaley, 2008). Mahmoud et al. (2011) reported that switching from a typical to an atypical improve sexual function improves sexual functioning compared to switching within typical. Another study conducted by Chiesa (2013) found similar results that, the most commonly medications associated with sexual dysfucntion are olanzapine, risperidone, haloperidol, clozapine, and thioridazine where as ziprasidone,

perphenazine, quetiapine and aripiprazole are associated with relatively low rates of SD. According to these studies atypical antipsychotics, with the exception of risperidone, are associated with lower rates of sexual dysfunction.

2.3 Duration of Using Antipsychotic medications and developing Sexual Dysfunction

Despite sexual dysfunction been studied, little has been reported on the association between the average duration of using antipsychotics and sexual effects. Results from the study conducted by Bobes et al., (2003) suggest that sexual dysfunction mainly occurs in the long term treatment due to failure of treating the symptoms of sexual dysfunction in the short term treatment. These findings further demonstrate that haloperidol is attributed to higher rates of sexual dysfunction in patients in acute phase. For long treatment, a high rate of sexual dysfuction is detected in those patients on risperidone. The findings from the study conducted by Montejo, (2010) showed that sexual dysfunction is very common in patients receiving long-term treatment with antipsychotic medication. Bitter et al., (2005), found that the rate of sexual dysfunction is highest between 3 and 6 months of treatment duration with antipsychotic medications. These show that both short and long term use of antipsychotic can result into SD.

2.4 Effects of Sexual Dysfunction on Adherence to Antipsychotic Medications

Sexual side effects due to antipsychotic medications are a critical issue that minimizes quality of life and reduces compliance to treatment (Chiesa, 2013). A study by Ascher-Svanum et al., (2008), indicates the difference in adherence to antipsychotic medications between two groups, typical and atypical antipsychotics. However, it does not explain in detail the relationships between compliance to these types of antipsychotics and side effects**.** The study results by Montejo, (2010) reported 32% have poor tolerance to antipsychotic induced sexual dysfunction, such that due the disturbances of sexual functioning, patients decided to stop treatment. Also others have reported interference of SD with their partner's relationship. The study by Montejo (2010) also showed that there is higher rate of poor tolerance in males (36%) as opposed to females (19%). Giving attention to the compliance issue to improve quality of life and adherent to antipsychotics treatment is emphasized (Liu-Seifert et al., 2009).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

The study design was a cross sectional study that employed quantitative methods. The design was selected because it's cheap and useful in determining the prevalence of the outcome of interest, for the population at a given point in time.

3.2 Study Setting

This study took place at Muhimbili National Hospital (MNH) Psychiatric Department in the out-patient clinic (OPC). MNH is the national referral hospital and university teaching hospital situated in Ilala District in Dar es Salaam region. It has a capacity of 1,500 beds and outpatients attendance of between 1,000 and 1,200 per week. The MNH Psychiatric Unit provides services to clients coming from all over the country. It provides services to referral cases from the three districts in the region i.e. Ilala, Kinondoni and Temeke. The unit is divided into several departments including; Occupational Therapy, Social Work and Clinical Psychology. Services offered include; in and outpatient services, child and adolescent services, community services and Methadone Assisted Therapy (MAT) services.

The inpatient unit consists of an acute ward partitioned for both male and female acutely ill patients, general ward for both male and female patients whose conditions have stabilized, and a private ward for patients who can afford private services. The psychiatric unit is further divided into four (4) firms: Ilala, Temeke, Kinondoni and Magomeni. Each firm deals with all psychiatric conditions with patients suffering from variety of psychiatric disorders. Each firm is headed by a psychiatrist, psychologist and social worker and has a special clinic day for attending clients.

3.3 Study Population

The study population was patients on antipsychotics attending follow up clinic at the psychiatry unit at MNH. The out-patient attendance per day was approximately 40-50 clients and clinics were conducted four days in a week.

3.4 Inclusion Criteria

The study participants included males and females patients on antipsychotic medication who were attending outpatient psychiatry clinic at MNH, with the following criteria

Age range between 18-50 years

Duration of treatment ≥ 3months

Stabilized on antipsychotics such that patients had stable mental status evaluation (MSE)

3.5 Exclusion Criteria

Acutely ill patients and those with disturbing psychotic symptoms and were excluded. Patients with co-morbid medical disorder particularly diabetes mellitus, hypertension or organic diseases, urological conditions, lymphatic diseases of the penis etc) known to cause sexual dysfunction, having primary sexual dysfunction, having concurrent psychiatric diagnosis known to affect sexual functioning (alcohol/ other substance dependence and depression) were excluded from the study. In this aspect the researcher asked from the patients about the history of the named condition and also checked the file prior to interview.

3.6 Sample size calculation

The estimated sample size N was computed using the formula below

$$N = \frac{Z^2 p (100-p)}{e^2}$$

Where;

N = Estimated Sample Size

Z = is the standard deviation in normal population, which turns out to be 1.96 on using the 95% confidence interval.

P= prevalence of SD among patients in previous study done by Montejo, (2010) was 46%.

e= margin of error

Hence from the formula above the sample size will be:

$$N = \frac{(1.96)^2 \times 46\ (100-46)}{5 \times 5}$$

N = 381

Allowing for 10% non-response, adjusted minimum sample size was

N‘= 424 which was approximated to 426.

Hence the estimated sample size was 426 respondents.

3.7 Sampling technique

This study employed convenient sampling strategy. In that arrangement the researcher chose cases that were available and who had satisfied the inclusion criteria. On the clinic day the patients were identified, given numbers then recruited. If the patient did not consent, then the next patient in the list was recruited. Patient‘s files were labeled after recruitment to avoid repetition. This sampling technique was employed because only participants with characteristics of interest were required among all patients attending the clinic depending on their availability or accessible. The study required patients who attended the clinic and met inclusion criteria.

Validity and Reliability of the study

The study used the Psychotropic-Related Sexual Dysfunction Questionnaire (PRSexDQ) which was adopted from Montejo et. al.,(2010) in Spain and translated to Swahili language. The tool was free, has been validated and has shown a satisfactory reliability for research purpose in measuring SD.

3.8 Data Collection

Data were collected through an interviewer administered, Kiswahili structured questionnaire. The questionnaire included among others general questions, the socio-demographic variables such as age, marital status, educational level, employment and clinical variables, such as, duration of treatment, current medication and so on. Sexual functioning was evaluated using

the Psychotropic-Related Sexual Dysfunction Questionnaire (PRSexDQ) designed and evaluated by Montejo et al., (2010).

According to Montejo and colleagues the PRSexDQ consists of seven items pertaining to sexual dysfunction. The first item is a screening item that assessed whether the patient has any sort of SD. The second item then assessed whether the patient has spontaneously reported any sexual dysfunction to his or her physician. The next items (items 3–7) assessed five dimensions of SD according to severity or frequency: loss of libido (0 = nil, 1 = mild, 2 = moderate, 3 = severe), delayed orgasm or ejaculation (0 = nil, 1 = mild, 2 = moderate, 3 = severe), lack of orgasm or ejaculation (0 = never, 1 = occasionally, 2 = often, 3 = always), erectile dysfunction in men/vaginal lubrication dysfunction in women (0 = never, 1 = occasionally, 2 = often, 3 = always), and patient's tolerance of the SD (0 = no sexual dysfunction, 1 = good, 2 = fair, 3 = poor). Only items 3 through 7 accounts for the total score of the PRSexDQ-SALSEX (total score ranges from 0 to 15). The independent variables of interest were age, sex, occupation, level of education, marital status duration of being on antipsychotic medications and types of antipsychotics while the dependent variables were SD and treatment compliance.

3.9 Data Analysis

Analysis of data was accomplished using computer software with SPSS version 20. For continuous variables (e.g. age) the mean, range, and standard deviation were used; categorical variables (e.g., gender) was described by absolute and relative frequencies.

Sexual dysfunction was defined as having a score equal to or greater than 1 in any of the four items of the PRSexDQ that evaluated the various dimensions of the sexual function. The potential relationship between some demographic and clinical variables (i.e., age, sex, civil status, treatment duration, and study drugs) and the presence of SD was investigated using a simple logistic regression analysis and all comparisons was considered significant if $P < 0.05$.

3.10 Ethical Consideration

Ethical clearance was sought from the Institutional review board of Muhimbili University of Health and Allied Science (MUHAS). Permission to conduct the study was obtained from the Executive Director of (MNH), Director of Clinical Services MNH, and finally the head of department of psychiatric unit. Informed consent to participate in the study was sought and all steps were taken to ensure confidentiality. For example the questionnaire did not include any client's name; only codes were used, therefore assured that information provided was confidential. The benefits and risks of participation were stated clearly in the consent form.

3.11 Consenting Process

Clients attending routine follow up clinic were given brief information about the study especially potential risk and benefit of participating in the study. Those who agreed to participate were asked to sign an informed written consent. The consent form addressed the purpose of the study and indicated the participants' willingness to take part in the study. It was also made clear that, acceptance or refusal to participate in the study did not have outward consequences. The researcher emphasized the freedom of not participating in the study, could withdraw any time and participants were also free not to answer a question if they felt uncomfortable about the question.

3.12 Confidentiality

To ensure confidentiality of participants' information, the questionnaire did not contain participant's name but rather the unique identifiers that were generated for the study purpose to identify participants. Participants were told not to mention their names during the interview.

CHAPTER FOUR

4.0 RESULTS

This chapter presents observations and interpretation of the data collected using the described methodology. The section summarizes results according to the objectives of the study and has been divided into sections that describe socio-demographic characteristics, prevalence of the problem and analysis of factors related to sexual dysfunction and treatment compliance among patients taking antipsychotic medications at Psychiatry unit in MNH.

4.1 Socio-demographic characteristics of participants

The data collected at the MNH psychiatric unit between March and April 2015 reveal that, of the 426 participants who were recruited in the study, 297 (69.7%) were males and 129 (30.3%) were females . A majority, 256 (82.1%) of recruited participants were married. The data further show that, there were few participants 4 (0.9%) in the adolescents' age group i.e. at 18 yrs while majority 263 (61.7%) were in the young adult age group i.e. 19-35 years. Overall mean age was 33.44 years, standard deviation 8.053 years.

Data on education and employment status of participants indicate that, a majority 232 (54.6%) of participants attained primary school education and a majority 192 (45.2%) were self employed. Table 1: Summarizes socio-demographic characteristics of participants.

Table 1: Socio-demographic characteristics of respondents

Age		
Age group (yrs)	Frequency	Percent (%)
Adolescents (18)	4	0.9
Young adults (19-35)	263	61.7
Middle aged adults (36-50)	159	37.3
Sex		
Males	297	69.7
Females	129	30.3
Marital status		
Married	188	42.2
Single	190	44.7
Divorced	40	9.4
Widowed	7	1.6
Employment		
Peasant	20	4.7
Government	38	8.9
Private sector	34	8.0
Self employment	192	45.2
No specific Job	141	33.2
Level of education		
Informal/none	26	6.1
Primary	232	54.6
Secondary	118	27.8
University	49	11.5

4.2 Prevalence of sexual dysfunction among patients taking antipsychotic medications

Sexual dysfunction was assessed by using five indicators which were asked according to severity or frequency of occurrence: the first was loss of libido, delayed orgasm or ejaculation, lack of orgasm or ejaculation, erectile dysfunction in men/vaginal lubrication dysfunction in women and patient's tolerance of the SD. Scores for sexual dysfunction were measured from 0-3. Participants were considered having sexual dysfunction if the score was equal to or greater than one in any of the item of the PRSexDQ that evaluated the various dimensions of the sexual function. Participants who scored zero for all items was considered as having no sexual dysfunction.

The analysis of data showed that, out of 426 participants who were recruited in the study, 271 (63.8%) were found to have sexual dysfunction while 154 (36.2%) did not have SD. In both sexes, the proportion of participants with sexual dysfunction was higher compared to those without SD, 170 (57.4%) among males and 101 (78.3%) among females, see table 2.

Table 2: Prevalence of SD among participants taking antipsychotic medication at psychiatric unit MNH

Sex	**Sexual dysfunction**		**Total**
	No SD	**SD**	
Male	127 (42.6%)	170 (57.4%)	297 (100%)
Female	28 (21.7%)	101 (78.3%)	129 (100%)
Total	**155 (36.2%)**	**271 (63.8%)**	**426 (100%)**

4.3 Distribution of participants with Sexual Dsyfunction across age group

The comparison of participants with sexual dysfunction among males and females found that, the proportion of female with SD was higher than males. The difference was statistically significant X^2=16.92, P<0.001.

Across age group, sexual dysfunction was common among Middle Aged Adult (36-50), 118 (74.2%) followed by Young Adults (19-35yrs) 152 (57.6%), table 3.

Table 3: Distribution of participants with Sexual Dsyfunction across age group

Age Group	Sexual dysfunction score		Total
	No. SD	SD	
Adolescents (18yrs)	3 (75%)	1 (25%)	4 (100%)
Young Adults (19-35yrs)	111(42.4)	152 (57.6%)	262 (100%)
Middle Aged Adult (36-50)	41 (25.8)	118 (74.2%)	159 (100%)
Total	**155 (36.4)**	**271 (73.6%)**	**426 (100%)**

4.4 Distribution of Sexual Dysfunction by marital status

The analysis of data on prevalence of sexual dysfunction by marital status show that, SD was reported by 147 (78.2%) of married while all Widowed, 7 (100%) were found to have SD, table 4.

Table 4: Distribution of Sexual Dysfunction by marital status

Age Group	Sexual dysfunction score		Total
	No. SD	SD	
Single	105 (55.3)	86 (44.7%)	190 (100%)
Married	41 (21.8)	147 (78.2%)	188 (100%)
Divorced	9 (22.5%)	31 (77.5%)	40 (100%)
Widowed	0 (0%)	7 (100%)	7 (100%)
Total	**155 (36.4%)**	**271 (63.6%)**	**426 (100%)**

4.5 Prevalence of forms of Sexual Dysfunction in study participants

Prevalence of form of sexual dysfunction among male participants and female participants were assessed whereby male participants were asked whether they experience decreased desire for sexual activity, erection difficult, delayed ejaculation/orgasm, delayed ejaculation/orgasm and lack of ejaculation or orgasm. Whereas female participants were asked whether they ever experienced decreased desire for sexual activity, lack of lubrication, delayed orgasm and lack of orgasm. The analysis of data on each form of SD according to sex was as shown in table 5 and 6.

As shown in table 5, of 296 males that participated in the study, 149 (50.4%) reported decrease in desire for sexual activity while 119 (40.3%) reported difficult in erection). Only 74 (25%) and 21 (7.1%) reported experiencing delay in ejaculation or orgasm and lack of ejaculation or orgasm respectively.

Table 5: Prevalence of forms of Sexual Dysfunction among male participants taking antipsychotic medications.

SD condition	SD among males		Total
	No problem	Decrease in SD	
Decreased desire for sexual activity	148 (49.7%)	149 (50.4%)	297 (100%)
Erection difficult	177 (59.8%)	119 (40.3%)	297 (100%)
Delayed ejaculation/orgasm	222 (75.0%)	74 (25.0%)	297 (100%)
Lack of ejaculation or orgasm	275 (92.9%)	21 (7.1%)	297 (100%)

4.6 Prevalence of forms of Sexual Dysfunction among female participants taking antipsychotic medication

Of the total 129 females who responded to the question about form of SD, 79 (61.3%) reported to experience decrease in desire for sexual activity while 83 (64.3%) reported to experience delayed in orgasm, table 6.

Table 6: Prevalence of forms of Sexual Dysfunction among female participants taking antipsychotic medication

SD condition	SD among females		Total
	No problem	Decrease in SD	
Decreased desire for sexual activity	50 (38.8%)	79 (61.3%)	129 (100%)
Lack of lubrication	68 (52.8%)	61 (47.3%)	129 (100%)
Delayed orgasm	46 (35.7%)	83 (64.3%)	129 (100%)
Lack of orgasm	115 (89.1%)	14 (10.9%)	129 (100%)

4.7 Decrease in sexual desire by sex of participant

Both males and female experience decrease in sexual desire for sexual activity. The analysis of data on decrease in sexual desire between female and male show that, decrease in sexual desire is common among female 61.3% than males 50.4%, the difference is statistically significant X^2=4.295, P< 0.05, table 7.

Table 7: Decrease in sexual desire by sex of participant

Sex	Decreased desire for sexual activity		Total	X^2	P - Value
	No decrease	Decrease in SD			
Male	148 (49.7%)	149 (50.4%)	297 (100%)	4.295	0.038
Female	50 (38.8%)	79 (61.3%)	129 (100%)		
	198 (46.5%)	**228 (53.5%)**	**426 (100%)**		

4.8 Severity of Sexual Dysfunction among males and females taking antipsychotic medication

The analysis of data on severity of sexual dysfunction among males show that, 27.7% of males experience mild sexual dysfunction in decrease in sexual desire, 15.9% moderate sexual dysfunction and 6.8% experience severe sexual dysfunction. The analysis of data further shows that, 6.8% of males experience severe sexual dysfunction in delayed ejaculation/orgasm while 51.1% experience mild sexual dysfunction in lack of ejaculation or orgasm, table 8.

Table 8 also shows that 29.5% of females experience mild sexual dysfunction in decreased desire for sexual activity, 21.7% severe sexual dysfunction in decreased desire for sexual activity. Thirty three point three percent (33.3%) of females experience severe sexual dysfunction in delayed orgasm and 24.8% mild sexual dysfunction in lack of lubrication.

Table 8: Severity of Sexual Dysfunction among participants taking antipsychotic medication by sex

Severity of SD among Males				
SD condition	**Mild problem**	**moderate problem**	**severe problem**	**Total**
Decreased desire for sexual activity	82 (27.7%)	47 (15.9%)	20 (6.8%)	149 (50.3%)
Erection difficult	81 (27.4%)	34 (11.5%)	4 (1.4%)	119 (40.2%)
Delayed ejaculation/orgasm	40 (13.5%)	14 (4.7%)	20 (6.8%)	74 (25.0%)
Lack of ejaculation or orgasm	15 (51.1%)	5 (1.7%)	1 (0.3%)	21 (53.1%)
Severity of SD among Females				
SD condition	**Mild problem**	**moderate problem**	**severe problem**	**Total**
Decreased desire for sexual activity	38 (29.5%)	13 (10.1%)	28 (21.7%)	79 (61.3%)
Lack of lubrication	32 (24.8%)	25 (19.4%)	4 (3.1%)	61 (47.3%)
Delayed orgasm	24 (18.6%)	16 (12.4%)	43 (33.3%)	83 (64.3%)
Lack of orgasm	9 (7.0%)	5 (3.9%)	0 (0.0%)	14 (10.9%)

4.9 Duration of treatment and development of sexual dysfunction

Sexual dysfunction seems to increase as duration of treatment gets longer. Analysis of data on different treatment duration of antipsychotic medications shows higher rates of sexual dysfunction among those who have been taking antipsychotic medication for more than 1 year. Regression analysis on relationship between treatment duration and development of sexual dysfunction show that, the odds of developing sexual dysfunction for the treatment duration of more than one year is 3 times more than the odds of developing SD for the treatment duration of 3-6 months (OR 3.209, 95% CI (1.444- 7.129).

Table 9: Relationship between treatment duration and development of Sexual Dysfunction

Treatment duration	P-value	OR	95% C.I.	
			Lower	Upper
3-6months				
7-12months	.727	1.160	.505	2.662
>1year	.004	3.209	1.444	7.129
>2years	.001	3.176	1.618	6.238

4.10 Treatment duration and desire for sexual activity

Severe decrease in desire for sexual activity was observed in 38 (80.9%) of those who have been taking antipsychotic for more than two years and 2 (4.3%) for those participants who have been taking antipsychotic medications for 3-6 months.

Table 10: Relationship between treatment duration and decreased desire for sexual activity

Duration of treatment	Decreased Sexual desire			
	No dysfunction	**Mild dysfunction**	**Moderate dysfunction**	**Severe dysfunction**
3-6months	27 (13.7%)	9 (7.5%)	3 (5.0%)	2 (4.3%)
7-12months	34 (17.3%)	13 (10.8%)	1 (1.7%)	3 (6.4%)
>1year	27 (13.7%)	32 (26.7%)	9 (15.0%)	4 (8.4%)
>2years	109 (55.3%)	66 (55.0%)	47 (78.3%)	38 (80.9%)
Total	**197 (100%)**	**120 (100%)**	**60 (100%)**	**47 (100%)**

4.11 Treatment duration and delayed ejaculation

In delayed ejaculation or orgasm, 41 (64.1%) of participants who have been taking antipsychotic medication for more than two years, experienced mild SD, 17 (56.7%) moderate and 50 (80.6%) experienced severe sexual dysfunction, where as among participants who have been taking antipsychotic for 3-6 months, 6 (9.4%) experienced mild sexual dysfunction, 2 (6.7%) moderate and 1 (1.6%) severe sexual dysfunction, table 11.

Table 11: Relationship between treatment duration and delayed ejaculation/organism

Duration of treatment	**Delayed ejaculation/orgasm**			
	No dysfunction	**Mild dysfunction**	**Moderate dysfunction**	**Severe dysfunction**
3-6months	32(11.9%)	6 (9.4%)	2(6.7%)	1(1.6%)
7-12months	38(14.2%)	5(7.8%)	4(13.3%)	4(6.5%)
>1year	46(17.2%)	12(18.8%)	7(23.3%)	7(11.3%)
>2years	152(56.7%)	41(64.1%)	17(56.7%)	50(80.6%)
Total	**268(100%)**	**64 (100%)**	**30(100%)**	**62(100%)**

4.12 Treatment duration and lack of ejaculation

The analysis of data on lack of ejaculation/orgasm shows that severe condition of SD in lack of ejaculation seems in participants that have been using antipsychotic medication for more than two years. One participant (4.2%) of those who have been using antipsychotic medications between 3 - 6 months has reported mild SD in lack of ejaculation/orgasm, table 12.

Table 12 and figure 2 show that, lack of ejaculation is experienced even within 3 to 6 months of use of antipsychotic medications. The severity of SD increases as treatment duration increases, for example severe cases of lack of ejaculation/orgasm were seen in participants who have been using antipsychotic medication for more than 2 years.

Table 12: Relationship between treatment duration and lack of ejaculation/orgasm

Duration of treatment	**No dysfunction**	**Mild dysfunction**	**Moderate dysfunction**	**Severe dysfunction**
3-6 months	40 (10.3%)	1 (4.2%)	0 (0.0%)	0(0.0%)
7-12 months	49 (12.6%)	2 (8.3%)	0 (0.0%)	0(0.0%)
>1year	64 (16.5%)	7 (29.2%)	1 (10.0%)	0(0.0%)
>2years	236 (60.7%)	14(58.3%)	9(90.0%)	1(100%)
Total	**389 (100%)**	**24 (100%)**	**10 (100%)**	**1 (100%)**

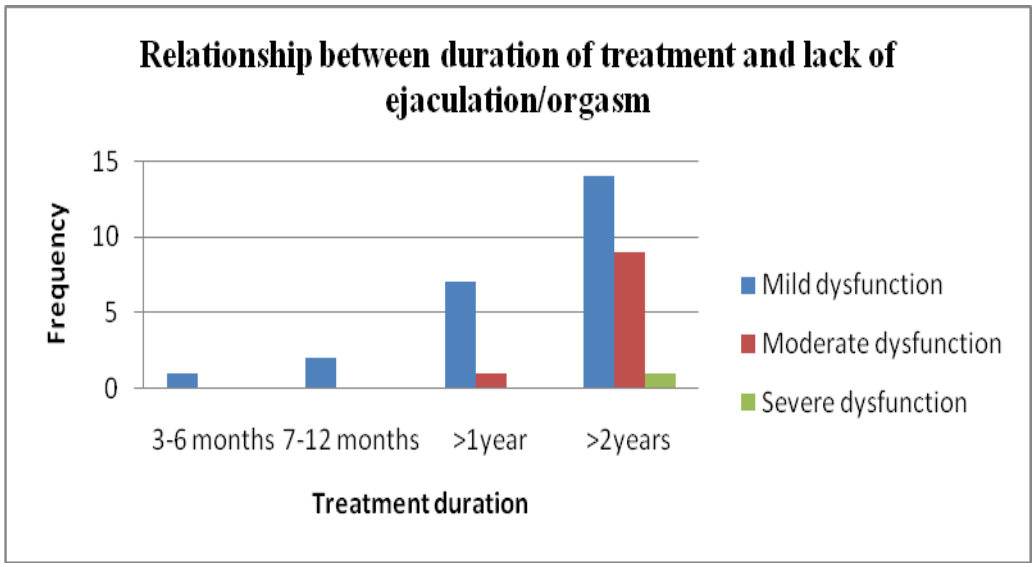

Figure 2: Relationship between duration of treatment and lack of ejaculation/orgasm

4.13 Treatment duration and difficult in erection

Analysis of data on difficult in erection or lubrication shows that 70 (61.9%), 45(77.6%), and 8 (100%) in mild, moderate and severe dysfunctions respectively occurs among those who have been taking antipsychotic medications for more than 2 years while for those who have been taking antipsychotic medications for 3-6 months the dysfunctions in difficult erection/lubrication the results were 7(6.2%), 3(5.2%) and 0(0.0%) in mild, moderate and severe dysfunctions respectively, table 13.

Table 13: Relationship between treatment duration and difficult in erection/lubrication

Duration of treatment	No dysfunction	Mild dysfunction	Moderate dysfunction	Severe dysfunction
3-6months	31(12.7%)	7 (6.2%)	3(5.2%)	0(0.0%)
7-12months	39(15.9%)	9 (8.0%)	3(5.2%)	0(0.0%)
>1year	38(15.5%)	27(23.9%)	7(12.1%)	0(0.0%)
>2years	137(55.9%)	70 (61.9%)	45(77.6%)	8(100%)
Total	**245 (100%)**	**113 (100%)**	**58 (100%)**	**8(100%)**

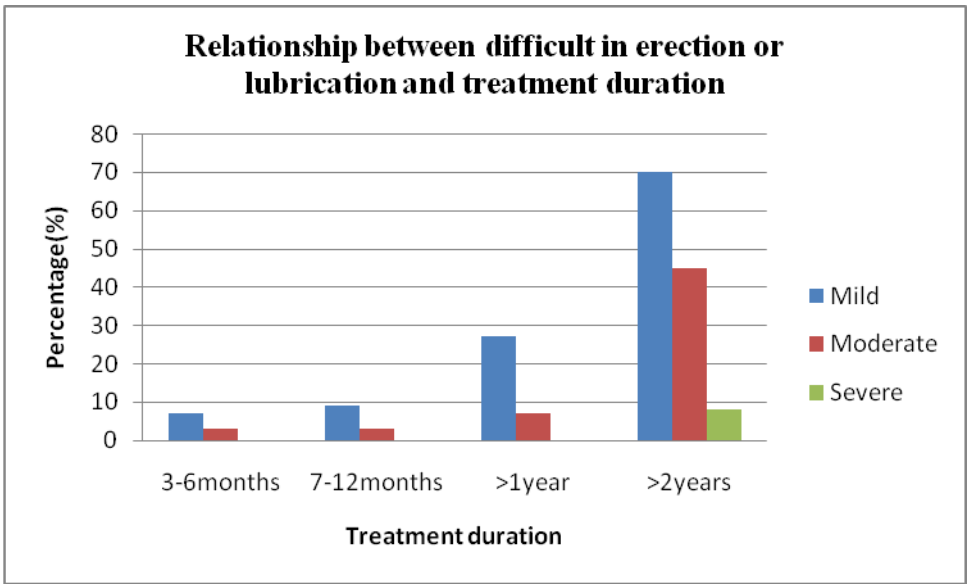

Figure 3: Relationship between SD and Treatment duration

4.14 Relationship between type of antipsychotics and development of sexual dysfunction

Relationship between type of antipsychotic and level of sexual dysfunction, was assessed among 426 participants where 337 (79%) were taking haloperidol, 36 (8.5%) chlopromazine, 19 (4.5%) resperidone, 32 (7.5%) olanzepine and 2 (5%) were taking other types of antipsychotics.

In the haloperidol group, 183 (54%) reported reduced sexual desire, 124 (37%) experience delayed ejaculation or orgasm, 147 (43.9%) had erection or lubrication difficulties and 28 (8.4%) experienced lack of ejaculation or orgasm.

In the Chlorpromazine group 22 (61.1%) reduced sexual desire, 18 (50.0%) delayed ejaculation or orgasm, 17 (47.2%) erection or lubrication difficulties and lack of ejaculation or orgasm was 3 (8.4%). Also 7 (36.9%) reduced desire, 4 (21.1%) delayed ejaculation or orgasm, 4 (21.0%) difficulties in erection or lubrication and 1 (5.3%) lack of ejaculation or orgasm was reported in the Resperidone group. Results from Olanzepine group were, 16 (50.0%) decreased desire, 11(34.4%) delayed ejaculation or orgasm, 11 (34.4%) erection or lubrication difficulties and lack of ejaculation or orgasm was 3 (9.3%).

Figure 4 shows relationship between type of antipsychotic medications and decrease in sexual desire among study participants. Decrease in sexual desire was the most frequently reported sexual dysfunction in all treatment groups. In Haloperiodol group, 91 (27.2%) experienced mild decrease in sexual desire where as 42 (12.5%) experienced severe decreased sexual desire. In the chlorpromazine group, 11 (30.6%) reported mild decrease in sexual desire, 8 (22.2%) moderate decrease in sexual desire. In the olanzepine group, 12 (37.5%) experienced mild decrease in sexual desire while 3 (9.4%) experienced severe decrease in sexual desire. None of the study participants in resperidone group reported severe decrease in sexual desire.

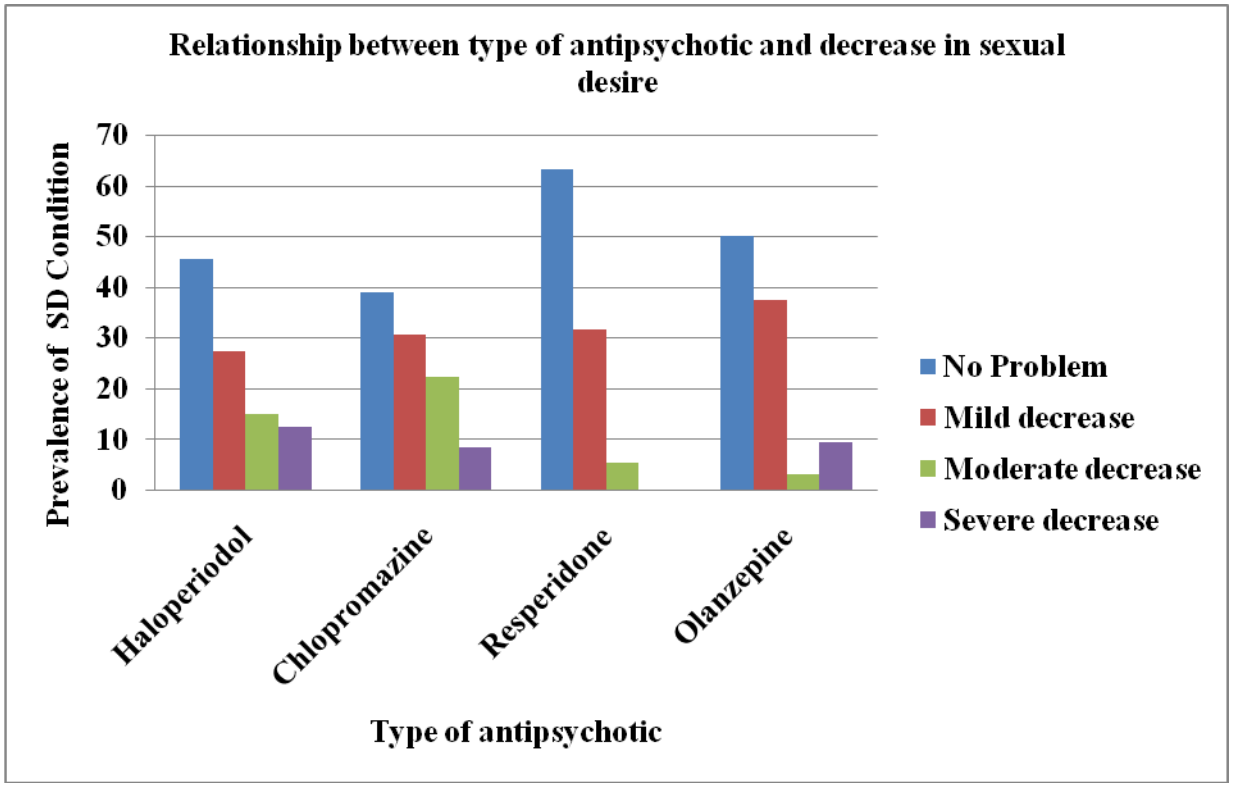

Figure 4: Relationship between type of antipsychotic and decrease in sexual desire

4.15 Type of antipsychotic medication and delayed ejaculation/orgasm

The odds of chlopromazine in causing decrease in sexual desire is 1.3 times more likely to cause decrease in sexual desire compared to haloperidol (OR 1.32, CI (5% (0.655-2.675).

The odds of chlopromazine in causing delayed ejaculation/orgasm is 1.73 times more likely to cause delayed ejaculation/orgasm compared to haloperidol (OR 1.73, 95% CI (5% (0.87-3.456).

Table 14: Relationship between type of antipsychotic medication and delayed ejaculation/orgasm

Antipsychotics	Delayed ejaculation/orgasm		P-value	OR	95% C.I.	
	No problem	SD			Lower	Upper
Haloperidol	215 (63.4%)	124 (36.6%)				
Chlopromazine	18 (50%)	18 (50%)	.118	1.734	.870	3.456
Resperidone	15 (78.9%)	4 (21.1%)	.179	.462	.150	1.424
Olanzepine	21 (65.6%)	11 (34.4%)	.804	.908	.424	1.946

4.16 Types of antipsychotic medications and lack/difficult in erection/lubrication

The odds of chlopromazine in causing lack/difficult in erection/lubrication was 1.15 times more likely to cause lack/difficult in erection/lubrication as opposed to haloperidol (OR 1.15, 95% CI (0.58- 2.23).

Table 15: Relationship between type of antipsychotic medications and lack/difficult in erection/lubrication

Antipsychotics	Lack/difficult in erection/lubrication		P-value	OR	95% C.I.	
	No problem	SD			Lower	Upper
Haloperidol	191 (56.3%)	148 (43.7%)				
Chlopromazine	19 (52.8%)	17 (47.2%)	.682	1.155	.580	2.299
Resperidone	15 (78.9%)	4 (21.1%)	.063	.344	.112	1.059
Olanzepine	21 (65.6%)	11 (34.4%)	.313	.676	.316	1.446

4.17 Types of antipsychotic medications and lack of ejaculation/orgasm

Results in table 17 also indicate that resperidone is 0.34 less likely to cause lack /difficult in erection/lubrication compared to haloperidol. The odds of olanzepine in causing lack of ejaculation/orgasm was 1.15 times more likely to cause lack of ejaculation/orgasm compared to haloperidol (OR 1.15, 95% CI (0.329- 4.010).

Table 16: Relationship between type of antipsychotic medication and lack of ejaculation/orgasm

Antipsychotics	Lack of ejaculation/orgasm		P-value	OR	95% C.I.	
	No problem	SD			Lower	Upper
Haloperidol	311 (91.7%)	28 (8.3%)				
Chlopromazine	33 (91.7%	3 (8.3%)	.988	1.010	.291	3.502
Resperidone	18 (94.7%)	1 (5.3%)	.644	.617	.079	4.796
Olanzepine	29 (90.6%)	3 (9.4%)	.828	1.149	.329	4.010

4.18 Effects of sexual dysfunction on adherence to antipsychotic medications

Among participants found with sexual dysfunction, 297 (69.7%) of the males participants and 129 (30.3%) of the females participants had poor tolerance to the disturbance due to antipsychotic medication. That means that, participant had considered discontinuing with treatment because of sexual dysfunction or it's seriously interfered with the couple's relationship. The result further shows that, males had higher rate of poor tolerance than females, this difference was statistically significant (X^2 =10.9, P < 0.05).

Table 17: Tolerance of changes in Sexual relationship

Sex	No sexual dysfunction	Well ,no problem to this reason	Fair	Poor	Total
Males	151 (73.9%)	76 (58.9%)	47 (78.3%)	23 (69.7%)	297 (69.6%)
Females	53 (26.1%)	53 (41.1%)	13 (21.7%)	10 (30.3%)	129 (30.4%)
Total	204 (100%)	129 (100%)	60 (100%)	33 (100%)	426 (100%)

4.19 Stopped taking antipsychotic due to sexual dysfunction

Sixty males (72.3%) ever stopped taking antipsychotic medications for sometimes due to fear of the effects of medications on sexual dysfunction where as 23 (27.7%) of females ever stopped taking antipsychotic medications for sometimes due to same reason, table 20.

Table 18: Stopped taking antipsychotic due to sexual dysfunction

Sex	Stopped taking antipsychotic for sometimes	Did not stop taking antipsychotic	Total
Males	60(72.3%)	235(69.1%)	295(69.7%)
Females	23(27.7%)	105(30.9%)	128(30.3%)
Total	83(100%)	340(100%)	423(100%)

CHAPTER FIVE

5.0 DISCUSSION

This study examined the prevalence of Sexual Dysfunction and its effect on treatment adherence in patients taking antipsychotic medications at out-patient clinic in MNH. This section discusses key findings obtained after analysis of data collected from 426 participants. It compares the findings with other published work on similar subject while reflecting situation in real practice.

5.1 Prevalence of Sexual Dysfunction among patients taking antipsychotics

Overall, 271 (63.8%) of participants taking antipsychotic medication had one or more forms of sexual dysfunction**.** This implies that, patients on antipsychotics are at risk of having sexual dysfunction. This study found that, the prevalence of sexual dysfunction was 78.3% among females and 57.4% among males and the comparison of prevalence of sexual dysfunction between males and females was found to differ significantly where by females had higher prevalence of sexual dysfunction as compared to males. Therefore it implies that, females suffer more from sexual dysfunction than males. Similarly studies done by Harley et al., (2009) and Macdonald et al., (2003) showed higher prevalence of SD in females than in males therefore providing support to this study.

5.2 Treatment duration of antipsychotic medications and subsequent development of Sexual Dysfunction

Sexual dysfunction seems to increase as duration of treatment gets longer. The study found that sexual dysfunction is frequently reported by patients who have been taking antipsychotic medication for a period of more than one year and above. Regression analysis on relationship between treatment duration and development of sexual dysfunction showed that, those who have been taking antipsychotic medications for more than one year are three times more likely to develop SD compared to those who have been taking antipsychotic medication for 3-6 months. This implies that, individuals taking antipsychotic medication for long duration are more likely to develop sexual dysfunction.

This observation is similar to the results reported by Bobes et al., 2003 that the adverse effects of antipsychotic mainly occur in the long term treatment. Therefore study further suggested that if the symptoms are not fully controlled in the short time, the disease itself could cause sexual dysfunction, particularly decreased libido. Mosaku et al., (2009) explained in his study that the duration of medication use, is also significantly associated with orgasmic functions, sexual desires and overall sexual satisfaction.

5.3 Type of antipsychotics and development of Sexual Dysfunction

The study included haloperidol, chlorpromazine, olanzepine and resperidone. It was found that all types of antipsychotic are likely to cause sexual dysfunction. Although the difference between types of antipsychotic medications in causing sexual dysfuction was statistically insignificant, the likelihood of chlorpromazine in causing decrease in sexual desire, delayed ejaculation/orgasm and lack/difficult in erection/lubrication was high compared to haloperidol. Resperidone and olanzepine were less likely to cause sexual dysfunction. Since, resperidone and olanzepine are second generation of antipsychotic medications while haloperidol and chlorpromazine are first generation it implies that, second generation antipsychotics are more likely to improve sexual functioning compared to first generation. Mahmoud et al., (2011) found that the use of second generation antipsychotic medication improve sexual functioning.

5.4 Antipsychotic induced Sexual Dysfunction and compliance to medications

The higher rate of poor tolerance of sexual dysfunction among males implies that males may consider discontinuing treatment than females. These findings are similarly to findings published by Montejo et al., (2008) and Rosenberg et al., (2003), who found higher rates of poor tolerance to medication disturbance among males than females. Their study also found that most of males consider stopping taking antipsychotics for sometimes due to fear of the sexual side effect of these medications.

5.5 Limitations and Mitigations of Study

Study has several limitations. The cross-sectional design limits the strength of the causal relationship. By asking patient's history of the condition that might cause SD prior to interview might have minimized this. The long treatment duration with the antipsychotics might be associated with a survival bias; that is patients who exhibited more severe forms of sexual dysfunction were more prone to discontinue their treatment and therefore were not captured by the study. Recruited at least large sample size (426) may also minimize the bias. The sample size for some of the antipsychotics studied, namely olanzepine and resperidone was too small and made difficult to reach any conclusion about these medications. Also other potential limitation is about generalizability. Since Muhimbili National Hospital is a referral hospital which receives patients from different corners of Dar es Salaam and Tanzania in general, the studied population might be a true represent the general population of people taking antipsychotics.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This study has revealed that significant proportional of participants taking antipsychotic develop sexual dysfunction. All types of antipsychotics (typical and atypical) are associated with development of sexual dysfunction ranging from decrease in sexual desire, delayed ejaculation or orgasm, erection or lubrication difficulties and lack of ejaculation or orgasm. Sexual dysfunction is common among those who have been taking antipsychotic for a longer time. Due to these side effects, participants ever considered discontinuing with medication a situation that is associated with relapse. This study has revealed existence of individuals with antipsychotic induced sexual dysfunction at MNH psychiatric unit, the information that may be useful for improving management and care of individuals that have been taking antipsychotic medication for a long period of time.

6.2 Recommendations

The study has found that people taking antipsychotic medications for longer period are likely to develop sexual dysfunction. Giving atypical antipsychotic medications to the patients with mental problems may minimize risk of developing sexual dysfunction. Therefore, there is a need to consider the use of atypical antipsychotic medication as a first line treatment in order to minimize risk of developing sexual dysfunction among individuals taking antipsychotic medications.

There is also the need to improve standard operation procedure for management of patients taking antipsychotic medication to insist on assessment of sexual dysfunction before and during treatment by performing simple screening for sexual dysfunction so that medications could be changed if patients experience SD in order to improve adherence.

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APPENDICES

CONSENT FORM (ENGLISH VERSION)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS CONSENT FORM

CODE NO_____

CONSENT TO PARTICIPATE IN THE STUDY ON SEXUAL DYSFUNCTION IN PATIENTS TAKING ANTIPSYCHOTICS AT PSYCHIATRY OUTPATIENT CLINIC IN MNH IN 2014-2015.

Greetings,

My name is Shamila Khalid, I am pursuing Master of Science in Mental Health Nursing at Muhimblili University of Health and Allied Sciences. I am doing a study on sexual dysfunction among patients taking antipsychotics and compliance to medication in psychiatry unit at Muhimbili National Hospital as part of fulfilling requirements of my Masters Degree award.

PURPOSE OF THE STUDY:

The study seeks to determine sexual dysfunction in patients taking antipsychotics attending psychiatry clinic at MNH.

WHAT THE PARTICIPATION INVOLVES:

If you agree to participate in the study, you will be interviewed, and a detailed clinical history regarding your illness will be requested and I would like to talk to you about sexual dysfunction and compliance to medication for about 10-15 minutes. If you decide to be in this study, you will be one of 426 people in this study.

CONFIDENTIALITY:

All information obtained from you will remain confidential and for the said purpose only. Your answers will be kept in strict confidentiality. In any sort of report we might publish, we will not include any information that will make it possible to identify you as a subject.

RIGHT TO WITHDRAW AND ALTERNATIVES:

Your participation in this research is voluntary and you will not be penalized or lose benefits if you refuse to participate or decide to stop.

BENEFITS AND RISKS:

There are no foreseeable risks or benefits to you for participating in this study. There is also no cost or payment to you but the interview may take your time. If you have questions while taking part, please stop me and ask.

Who to contact:

If you would like to talk with someone about your rights of being a subject in this research study or about ethical issues with this research study, you may call me on my telephone number 0763641105 or you may contact Prof Mainen Moshi, the Director of the Research and Publications at MUHAS, P.O. Box 65001 Dar- es- Salaam.

Do you have any questions?

Do you agree?

Participant agrees…… Participant does NOT agree……..

I……have read the content of this form.

My questions have been answered. I agree to participate in this study

Signature participant……..

Signature witness……...

Date of signed consent……..

Appendix I: Ridhaa ya Kushiriki Katika Utafiti

OMBI LA RIDHAA YA KUSHIRIKI KATIKA UTAFITI KUHUSU KUPOTEZA UWEZO WA KUJAMIANA KWA WAGONJWA WA AKILI WANAOTUMIA DAWA ZA KUTIBU AKILI KATIKA KITENGO CHA AFYA NA MAGONJWA YA AKILI, HOSPITALI YA MUHIMBILI.

Habari, Jina langu ni Shamila Khalid, umechaguliwa kushiriki katika utafiti unaohusu kupoteza uwezo wa kujamiana kwa wagonjwa wa akili wanaotumia dawa za kutibu akili katika kitengo cha afya na magonjwa ya akili, hospitali ya muhimbili.

MADHUMUNI YA UTAFITI:

Lengo kuu la utafiti huu ni kufahamu kuhusu tatizo la kupoteza uwezo wa kujamiana kwa wagonjwa wa akili wanaotumia dawa za kutibu akili.

JINSI YA KUSHIRIKI:

Kama utakubali kushiriki, utafanyiwa usaili na kuulizwa maswali kuhusu historia ya ugonjwa wako.

Ningependa kuongea na wewe kwa muda upatao dakika 15 hadi 20. Endapo utaridhia kusiriki katika utafiti huu utakuwa ni mmoja kati ya watu 420 watakaoshiriki katika utafiti huu.

USIRI:

Taarifa zote utakazotoa kwenye utafiti huu zitatunzwa kwa usiri mkubwa. Taarifa zitakazokusanywa zitaingizwa kwenye kompyuta, zikiwa katika namba ya siri. Taarifa zitatumika kwa ajili ya utafiti huu tu.

HAKI YA KUJITOA KWENYE UTAFITI:

Ushiriki wako katika utafiti huu ni hiari, na hakuna adhabu yoyote endapo hutaridhia au kuamua kusitisha mahojiano.

FAIDA NA ATHARI:

Hakuna athari au faida zozote kwako katika kushiriki katika utafiti huu na pia hakutakuwa na gharama zozote au posho kwa ajili ya ushiriki ila itachukua muda wako tu. Ni matumaini yangu kuwa utafiti huu utakuwa ni wenye manufaa kwako na jamii kwa ujumla kwani taarifa zitakazokusanywa zitasaidia kutambua ukubwa wa tatizo la tatizo la kupoteza uwezo wa kujamiana kwa wagonjwa wa akili wanaotumia dawa za kutibu akili

Nani wa kuwasiliana nae?

Endapo una swali linalohusiana na utafiti huu, tafadhali usisite kuuliza. Majibu yako yatakuwa siri. Endapo taarifa hizi zinachapishwa kwa namna yoyote taarifa zozote zinazoweka kufanya utambulike hazitajumuishwa.

Kama una swali au ungependa kupata maelezo zaidi baada ya kukamilisha mahojiano, unaweza kuwasiliana na mimi kupitia namba 0763641105 au kwa Prof Mainen Moshi, Mkurugenzi wa Utafiri na Machapisho ya Chuo, Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili S.L.P 65001 Dar- es- Salaam.

Una maswali?

Je unakubali kushiriki kwenye utafiti (weka alama)

Ndiyo……. Hapana……

Mimi……, nimeelezwa / nimesoma maelezo haya , maswali yangu yamejibiwa.

Nimekubali kushiriki kwenye utafiti huu

Sahihi ya mgonjwa ……

Sahihi ya ndugu/shahidi……

Sahihi ya mtafiti……

Tarehe…….

Appendix II: Questionnaires - English Version

Prevalence of Sexual Dysfunction among Patients Taking Antipsychotic Medications at Psychiatry Unit in Muhimbili National Hospital

GENERAL INFORMATION

Name of interviewer: _____ Date of interview: {...../...../2014}

Patients Initials: _____ MNH File No: _____

SOCIODEMOGRAPHIC CHARACTERISTICS

Q. No.	Questions	Coding categories	Response
1.	How old are you?	Age (years)	
2.	Sex	1)Male 2)Female	
3.	Marital status?	1) Married 2) Single 3) Divorced 4) Cohabiting 5) Widowed 6) Others_____	
4.	Highest level of education?	1) Informal/None 2) Primary 3) Secondary 4) Post Secondary 5) University 6) Others (specify)	
5.	Current employment?	1) Farmer/peasant 2) Government employee 3) Private sector employee 4) Self employment 5) Others_____	

SEXUAL FUNCTIONING AND CLINICAL HISTORY

6. For how long have you been on antipsychotic medications? (*circle that applies*)
   1) 3-6 months
   2) 7 - 12 Months
   3) More than 1yrs
   4) More than 2yrs
7. What type of antipsychotics is the patient taking (*Check file and circle that applies*)
   1) Haloperidol
   2) Chlopromazine
   3) Resperidone
   4) Olanzepine
   5) Any other…**……..**
8. What other antipsychotic medication ever used before (*Ask the patient also check file and Circle that applies*)
   1) Never changed medication
   2) Haloperidol
   3) Chlopromazine
   4) Resperidone
   5) Olanzepine
   6) Any other…**……..**
9. Check the patient file to see if change in sexual activity was reported (*Circle that applies*)
   1) Yes (If yes skip next question)
   2) No (If No go to next question)
10. Have you observed any type of change in your sexual activity (excitation, erection, ejaculation, vaginal lubrication, or orgasm) since you began taking the drug treatment?
   1) Yes
   2) No

11. Have you observed any decrease in your desire for sexual activity or in your interest in sex?
    0) No problem
    1) Mild decrease. Somewhat less interest.
    2) Moderate decrease. Much less interest.
    3) Severe decrease. Almost none or no interest.
12. Have you observed any delay in ejaculation/orgasm?
    0) No delay
    1) Mild delay or hardly noticeable
    2) Moderate delay or clearly noticeable
    3) Intense delay, although ejaculation is possible
13. Have you observed that you are unable to ejaculate/or to have an orgasm once you begin sexual relations?
    0) None.
    1) Sometimes
    2) Often
    3) Always or almost always.
14. Have you experienced any difficulty obtaining an erection or maintaining it once you have initiated sexual activity? (vaginal lubrication in women)
    0) Never.
    1) Sometimes
    2) Often
    3) Always or almost always
15. How well have you tolerated these changes in your sexual relations?
    1) No sexual dysfunction
    2) Well. No problem due to this reason.
    3) Fair. The dysfunction bothers him or her although he or she has not considered discontinuing the treatment for this reason. It interferes with the couple's relationship.

4) Poor. The dysfunction presents an important problem. He or she has considered discontinuing treatment because of it or it seriously interferes with the couple's relationship.

16. Have you ever stopped taking antipsychotic medications due to fear of the effect of drugs on sexual function?

    1. Yes
    2. No

Appendix III: Dodoso la Mhojiwa

UTAFITI KUHUSU KUPOTEZA UWEZO WA KUJAMIANA KWA WAGONJWA WA AKILI WANAOTUMIA DAWA ZA KUTIBU AKILI KATIKA KITENGO CHA AFYA NA MAGONJWA YA AKILI, HOSPITALI YA MUHIMBILI.

GENERAL INFORMATION

Jina la Mhojaji: _____ Tarehe ya Mahojiano: {...../...../2015}

Namba ya Jalada la Mhojiwa _____

TAARIFA BINAFSI

1.0 Umri…….

2.0 Jinsia

3.0 Hali ya ndoa

1) Hujaowa
2) Umeolewa/unaishi na mpenzi
3) Umetaliki/umetengana
4) Mgane

4.0 Kiwango cha elimu

1) Hujasoma
2) Elimu ya msingi
3) Elimu ya sekondari
4) Elimu ya chuo

5.0 Kazi

1) Mkulima
2) Serikalini
3) Shirika bimafsi
4) Binafsi

UWEZO WA KUJAMIANA NA HISTORIA YA KIAFYA

1. Ni kwa muda gani umekuwa ukitumia dawa za akili (Zungushia inayohusika)
   1) Miezi 3 hadi 6
   2) Miezi 7 hadi 12
   3) Zaidi ya Mwaka 1
   4) Zaidi ya Mika 2
2. Unatumia dawa gani (Angalia jalada na zungushia inayohusika)
   1) Haloperidol
   2) Chlopromazine
   3) Resperidone
   4) Olanzepine
   5) Nyingine taja **……..**
3. Umewahi kutumia dawa aina nyingine kwa ajili ya ugonjwa wa akili (Muulize mgonjwa, pia angalia jalada kisha zungushia inayohusika)
   1) Sijawahi kutumia dawa nyingine
   2) Haloperidol
   3) Chlopromazine
   4) Resperidone
   5) Olanzepine
   6) Nyingine taja **……..**
4. Angalia jalada la mgojwa kuona kama mgonjwa amewahi kutoa taarifa kuhusu mabadiliko ya nguvu za kujamiana (*Zungushia inayohusika*)
   1) Ndiyo (Kama ndiyo nenda swali la 20)
   2) Hapana
5. Je! Tangu umeanza kutumia dawa za akili, umegundua mabadiliko yoyote katika nguvu za kujamiana (Kudindisha, kutoa shahawa au kupata hamasa)?
   1) Ndiyo
   2) Hapana

6. Umegundua mbadiliko au kupungua kwa hamu kujamiana au mhemko wa kujamiana?
    1) Hapana
    2) Kiasi fulani.
    3) Kiasi.
    4) Sina hamu ya kujamiana kabisa
7. Je unachelewa kumwaga shahawa?
    1) Sichelewi
    2) Ndiyo nachelewa kiasi,
    3) Nachelewa
    4) Nachelewa sana kumwaga shahawa au kufika kileleni
8. Je! Unahistoria ya kushindwa kutoa shahawa /kufika kileleni unapokuwa katika mahusianao ya mapenzi?
    1) Hapana.
    2) Wakati mwingine
    3) Mara nyingi
    4) Kila wakati .
9. Je! Huwa unashindwa kudindisha au kudumisha udindishaji / au kutokwa na ute ute wakati wa kujamiana
    1) Haitokei .
    2) Wakati mwingine/Mara kadhaa)
    3) Mara nyingi
    4) Muda wote
10. Je! unapata matatizo ya mahusiano ya ndoa kutokana na tatizo hili ?
    1) Sijapoteza uwezo wa kujamiana
    2) Sijapata tatizo la mahusiano ya ndoa kuhusiana na hali hii .
    3) Kiasi. Upungufu wa nguvu za kujamiana humkera mwenzi wangu na naendelea na dawa za ugonjwa wa akili.
    4) Mahusianano siyo mazuri. Kupungua kwa nguvu za kujamiana ni tatizo kubwa katika mahusiana na nafikiria kuacha kutumia dawa za ugonjwa wa akili.

15.Ulishawahi kuacha kutumia dawa za akili kwa kuhofia matatizo ya kupoteza uwezo wa kujamiana?

1.Ndiyo

2.Hapana

Appendix IV: ETHICAL CLEARANCE LETTER

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

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Ref. No. MU/PGS/SAEC/Vol. IV/

Date: 22/01/2015

Shamila Halid,
MSc. Mental Health Nursing,
MUHAS.

u.f.s. Supervisor,
Dr. Edith Tarimo.
MUHAS.

Re: YOUR REQUEST FOR APPROVAL OF ETHICAL CLEARANCE

Please be informed that the Expedited Review Sub-Committee of Senate Research and Publications held its meeting on 21st January, 2015, together with other business the committee discussed your proposal and came up with the attached comments.

You are required to address all comments and resubmit your proposal as soon as possible not later than two weeks from the date of this letter.

Please note that all addressed comments should be bolded in the text and summarized as per attached format. Short to that your proposal resubmission will be considered as first submission and will be subjected to all review procedures.

Prof. O. Ngassapa
DIRECTOR OF POSTGRADUATE STUDIES

c.c Director for Research and Publication, **MUHAS** - For noting
c.c. Dean, School of Nursing, **MUHAS** - For noting