"ASSESSMENT OF SEXUAL SATISFACTION IN WIVES OF PATIENTS WITH EPILEPSY: A CROSS SECTIONAL STUDY"

BY

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Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"ASSESSMENT OF SEXUAL SATISFACTION IN WIVES OF PATIENTS WITH EPILEPSY : A CROSS SECTIONAL STUDY",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

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ABSTRACT

Introduction:

Patients with epilepsy (PWE) often experience its effects on many inter-connected facets of their lives. Studies indicate that sexual dysfunction is common in male epileptics and severely impacts quality of life and family relationships. In a country like India where the care-giving burden primarily falls on the spouse, the impact of epilepsy on sexual and marital satisfaction remains largely understudied.

Objectives:

To assess sexual satisfaction in wives of patients suffering from epilepsy. Additionally, to assess the factors in PWE affecting sexual satisfaction in wives of PWE.

Methods:

A total of 100 wives of PWE seeking treatment at a tertiary care hospital were recruited for this study over a period of one year. Socio-demographic data was obtained and self-report by wives was used to assess overall sexual satisfaction. Sexual and marital satisfaction were assessed further in wives of PWE using the Sexual Satisfaction Scale for Women (SSS-W) and the Kansas Marital Satisfaction Scale (KMSS), respectively. Factors in PWE affecting sexual satisfaction in wives were also assessed. Data was analysed using appropriate statistical methods.

Results:

Nearly half of wives of PWE reported overall absence of sexual satisfaction. Those with sexual dissatisfaction scored significantly lower in the contentment and

communication sub domains of sexual satisfaction, although the overall sexual satisfaction was not found to be significantly different. Furthermore, as a sub domain of marital satisfaction, satisfaction with husband as a spouse was found to be significantly lower in those with sexual satisfaction. Overall sexual dissatisfaction was found to be linked to lower marital satisfaction. Type of epilepsy in PWE and presence of substance use in PWE were found to be significant factors associated with sexual dissatisfaction among wives. Erectile dysfunction, premature ejaculation, and loss of libido in husbands were main causes for sexual dissatisfaction among wives.

Conclusion:

This study assessed the finer aspects of the sexual and marital satisfaction of wives of PWE and shows the widespread presence of sexual dissatisfaction among wives of PWE. It has also exhibited factors among PWE affecting the sexual satisfaction in these wives. This study has implications for both clinical practice and psychosocial research.

Keywords:

epilepsy, sexual satisfaction, marital satisfaction, sexual dysfunction

ABBREVIATIONS

PWE	Patients with Epilepsy
SSS-W	Sexual Satisfaction Scale for Women
KMSS	Kansas Marital Satisfaction Scale
AED	Anti-epileptic drugs
GMSEX	Global measure of Sexual Satisfaction
NSSS	New Sexual Satisfaction Scale
ISS	Index of Sexual Satisfaction
GRISS	Golombok-Rust Inventory of Sexual Satisfaction
FSFI	Female Sexual Function Index
PGWB	Psychological General Well-Being
DAS	Dyadic Adjustment Scale
MSI	Marital Satisfaction Inventory
QMI	Quality Marital Index
MAT	Marital Adjustment Test

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INTRODUCTION

The World Health Organization predicts that nearly one billion individuals worldwide suffer from neurological disorders and their consequences. [1] However, a commonly overlooked facet when considering the impact of such disorders is their impact on the caregivers and partners of the patients. Chronic illnesses tend to permeate into all aspects of a patient's life and severely impact not only the patient and their partner but also the couple's relationship. [2] An increasing severity of symptoms also results in a greater level of marital distress. Several factors such as over powerful emotional bonds [3], behavioural and personality changes from the patient and feelings of detachment [4] all impact the lives of their partners.

In a country like India this burden of caregiving predominantly falls on the wives of patients and several studies indicate that such women caregivers face more stress than their male counterparts. [5,6] The added burden of juggling multiple roles, responsibilities, and myriad societal expectations, that are thrust on to women, takes a toll on their physical, emotional as well as psychological health. [7,8,9] While the impact of these conditions on the spouse/partner is clear, several studies conducted in the Indian subcontinent fail to evaluate the dyadic relationship due to many factors. [10] Patients frequently feel too ashamed to talk about these issues, or they may even be unable to subjectively recognise their existence and severity. Even doctors may feel awkward talking about these concerns or may not understand how common and significant they are.

Among the few studies conducted on this issue in India a study by Aggarwal et al. in Chandigarh revealed a significant impact of Schizophrenia and Recurrent Depressive Disorder in spouses of patients with the Quality of marriage, Marital Forgiveness, Dyadic Adjustment, and New Sexual Satisfaction Scales all showing

significant decreases. [11] Furthermore, nearly 50% of patients receiving antidepressant medications in another study in India reported that their spouse/partner reacted adversely to their sexual dysfunction highlighting another avenue by which partners are impacted by these disorders. [12]

A study conducted in stroke patients showed that 65% spouses reported a decrease in libido, 48% a decrease in overall sexual activity, and 31% feeling a moderate or complete sexual dissatisfaction. [13] Another study looking at the impact of diabetes on sexual relationships revealed that both male and female diabetics had more arousal phase dysfunctions and 49 % of female and 25 % of male partners state that the disease had a negative influence on their sex life. [14,15] Finally, in advanced heart failure patients, 47.5% reported a marked decrease in their frequency of sexual activities, 31.2% a marked loss of pleasure or satisfaction with sexual activities and 24.5% said that their sexual pleasure or satisfaction had stopped completely. [16]

Epilepsy is a common and prevalent condition that has a prominent impact on many people in India [17]. Recurrent seizures, ranging from brief to prolonged episodes of violent shaking brought on by aberrant electrical activity in the brain is the hallmark of epilepsy. [18] Besides the obvious impact on the physical health of the patient, epilepsy also impacts their mental wellbeing. [19,20,21] Among the many comorbidities associated with this condition, sexual dysfunction is an understudied issue that impacts both the patient and their partner. Many factors such as the physiological repercussions of epileptic discharges in brain areas controlling sexual behaviour, a fear of having a seizure during sexual interaction, the impact of antiepileptic therapeutics, altered serum sex hormone concentrations and psychosocial issues, are believed to contribute to sexual dysfunction in patients with epilepsy (PWE). [22]

Sexual dysfunctions usually begin after the onset of seizures and is commonly present in untreated PWE. [23,24,25,26] Infertility, impotence, diminished desire or potency, and a loss of libido are among the most common sexual dysfunctional symptoms in PWE. [23,27,28] According to research by Braun et al. (2000), PWE are up to 57% more likely to experience erectile dysfunction compared to the general population prevalence of 3-19%. [29] AED are known to cause and worsen sexual dysfunction [19] and long-term therapy causes significant abnormalities in the functioning of the hypothalamic pituitary axis functioning. [30] However, the function of sexual satisfaction in wives of patients suffering from illnesses like epilepsy remains poorly understood, even though a couple's sexual life and satisfaction are essential elements of total marital happiness. It is therefore crucial to evaluate the effects of living with a PWE on the wives' quality of life, marital happiness, and in particular sexual satisfaction in a nation like India.

Since there are substantial gaps in the literature about female sexual behaviour and views around sexuality in India, this study aims to evaluate the sexual satisfaction of the wives of PWE in the city of Belagavi over a one-year period. It also aims to identify modifiable variables such as psychological, social and lifestyle factors that may impact sexual functioning in PWEs and help develop screening tools and counselling programs to help alleviate this condition. These findings could also potentially help neurologists to not only consider regimen alterations in AEDs but also change them altogether to overcome the development of sexual dysfunction in PWE. Ultimately, the results of this study may assist development of therapeutic approaches that benefit PWE and their wives' quality of life.

OBJECTIVES

Primary:

To assess sexual satisfaction in wives of patients suffering from epilepsy

Secondary:

To assess the factors in PWE affecting sexual satisfaction in wives of PWE.

REVIEW OF LITERATURE

Epilepsy is a group of neurological disorders that leads to significant socio-economic and healthcare burden in many countries throughout the world. Around 50-70 million people in the world suffer from this condition accounting for nearly 0.5-1% of the total world population [17,31,32] with approximately 12 million people suffering from this disorder in India alone. [17] Nearly 80% of those affected by epilepsy live in low- and middle-income countries which is indicative of a significantly elevated rate compared to high-income countries. [31] PWE often experience its effects on several interconnected aspects of their lives, including the physical, psychological, and social levels.

While epilepsy is characterized by the presence of seizures, several other aspects such as behavioural, emotional, personality, and other psychiatric disorders are found in one-third to half of all epileptics. [19,20,21] Commonly reported types of personalities found in PWE include obsessive–compulsive, schizoid, schizotypal, antisocial, avoidant, dependent and dissociated personalities with traits such as a preoccupation with anger, excessive emotionality, philosophical and religious concerns, viscosity, circumstantiality, altered sexuality and hypergraphia. [33] Several studies indicate that depression (30%), mood disorders (24–74%), anxiety disorders (10–25%), psychoses (2–7%) and personality disorders (1–2%) all show varying levels of comorbidity in PWE. [34] There is also a high prevalence of emotional problems in PWE which are further elevated by prominent emotional and interpersonal adjustment issues. [35] Such comorbidities along with the presence of epilepsy itself place an inordinate burden and affect the quality of lives of not only the patients but also their caregivers. [29]

While such comorbidities impact the progression of epilepsy itself, an understudied but prevalent problem that affects both the patient and their caregiver is sexual dysfunction. Among PWE, a higher prevalence of sexual dysfunction is observed in patients with long duration and higher seizure frequency, uncontrolled epilepsy, focal epilepsy, and those receiving enzyme-inducing and multiple anti-epileptic drugs (AED). [36] Studies indicate that patients with focal epilepsy are four times more likely to have sexual dysfunction compared to patients with primary generalized epilepsy [37,38] with sexual dysfunctions more common in patients with right temporal lobe epilepsy. [39,40] Furthermore, a longer duration of epilepsy is also associated with poorer sexual functioning in women PWE. [41] Moreover, while erectile dysfunction is the most common sexual dysfunction in PWE, approximately 10%–20% patients also present with decreased libido. [36] Patients are often too embarrassed to discuss these problems or may even lack subjective appreciation of their presence and extent. Physicians, too, are often uncomfortable about addressing such issues or may fail to recognize their frequency and importance. For the optimal care of PWE an understanding of the impact of sexual dysfunction in PWE is therefore an urgent need. [22]

Sexual dysfunction in PWE is likely caused by a variety of factors including physiological effects of epileptic discharges in brain regions mediating sexual behaviour, as well as psychosocial factors affecting social development, self-esteem, and sexual arousal. [22] Moreover, additional variables known to influence the prevalence of sexual difficulties in PWE include having low self-esteem, a fear of having a seizure during sexual contact, antiepileptic medication therapies, modified serum sex hormone concentrations, anxiety, and melancholy etc. Seizures are rarely induced by sexual intercourse. However, if a seizure does happen during sex, it may

be extremely damaging for both participants. PWE may initiate sex less frequently and experience less pleasure during sex as they may be worried about having a seizure. Furthermore, some people worry that the strain of having sex may lead their spouse or partner to have a seizure, and this anxiety can make it difficult for the couple to enjoy their time together. Both partners may feel too anxious to relax due to the irregular breathing pattern, changed expression, and rigidity of limbs that can accompany normal sexual arousal. [42]

AEDs are known to source and deteriorate sexual dysfunction [19] and long-term therapy causes substantial abnormalities in the working of the hypothalamic pituitary axis. [30] Certain medications are enzyme inducing such as those acting on CYP3A4, CYP2C9, CYP2C19 and act via the hepatic cytochrome P450 system. [19,29,42] Induction of these enzymes increases the hepatic synthesis of sex hormone binding globulin leading to the direct suppression of testosterone synthesis in the gonads. This also leads to an absolute or relative increase in serum oestradiol levels. [19,29,43,44] With prolonged use, this results in a reduction in free (bioactive) testosterone [45] and may result in diminished libido and cause sexual dysfunction in PWE. [29] Drugs like carbamazepine, clobazam, clonazepam, oxcarbazepine, phenytoin, phenobarbital, pregabalin, primidone, and topiramate have all been shown to cause loss of interest in sex and decreased libido in male epileptics. [45] These drugs have also been implicated in causing erectile dysfunction. [45] A randomized-controlled trial to assess the effectiveness of AED, reported decreased libido in 22% of patients taking primidone, 16% of those taking phenobarbital, 13% of those taking carbamazepine, and 11% of those taking phenytoin. [46] Bromide, a medication often recommended to treat seizures, can cause severe acne. Phenytoin and phenobarbital can make facial hair darker and cause the skin on the face to become coarser. The hair on the arms and legs

may also darken and seem thicker. [42] These cosmetic reasons could also cause decreased sexual attraction towards epileptics from their partners. AED-induced factors can further exacerbate sexual dysfunction in patients and could contribute to diminished sexual satisfaction in wives of PWEs.

Two under investigated factors that impact the prevalence of sexual dysfunction among PWE are the impact of alcoholism and oral health. Alcohol intoxication many times leads to head trauma that can result in post-traumatic epilepsy. [47] While PWE are frequently advised to avoid alcohol, alcoholism is seen in 12–36% of PWE. [48] The two most frequently diagnosed aetiologies of symptomatic seizures in alcohol-dependent patients other than true alcohol withdrawal seizures are head trauma and stroke. [47] Furthermore, a study conducted in PWE in India indicated that 72% of patients had one or more sexual dysfunction, the most common being premature ejaculation, low sexual desire, and erectile dysfunction. [49] PWE also tend to exhibit worse oral health than the nonepileptic population. [50] Antiepileptics like phenytoin are known to cause gingival hyperplasia which often leads to tooth loss. [42] Furthermore, generalized tonic–clonic seizures which are frequently present in epilepsy often cause minor oral cavity injuries, to the tongue or other areas of the oral mucosa. Taken together such oral ailments in PWE contribute to poor oral hygiene and health which in turn may also contribute to avoidance by wives and cause a decrease in sexual satisfaction.

Sexual satisfaction and healthy sexual functioning are important factors in determining the quality of life in adults. [51] However, there is often a reluctance on the part of both physicians and patients in discussing sexual health during clinical encounters. [52] Sexual health involves the confluence of the somatic, intellectual,

emotional, and social aspects of one's life in ways that are positively enriching with a view towards enhancing love, communication, personality etc. [53] Several components including an acceptance of one's sexual orientation, stable self-confidence, functioning sexual physiology and social interaction are vital for a satisfactory sex life. [54] While there is no overall consensus on its definition, sexual satisfaction is associated closely and generally depends on overall relationship satisfaction. [55] A thematic analysis of the understanding of sexual satisfaction by Giuliano et. al. found two main underlying themes. Firstly, a personal sexual wellbeing based on arousal, achieving orgasm, feeling pleasure and a positive feeling and secondly, a dyadic relationship process involving the expression of feelings, romance, desire, and sexual activity. With this viewpoint in mind, most measures of sexual satisfaction focus on positive sexual outcomes in these two thematic areas. [56]

In a survey conducted soon after India's independence, sexuality was viewed as taboo and sexual topics were typically avoided in the family. [57] Men and women tend to view sexual satisfaction from different viewpoints. [36] Women tend to view sexual pleasure as a more complex phenomenon at the psychological and physical levels compared to men. Several studies have identified intra-relationship communication and the degree of commitment as key factors when we specifically consider women's sexual satisfaction. Dundon et al. hypothesized that sexual satisfaction is only partially explained by sexual function. Other factors involved in women's lives, such as psychological well-being, relationship adjustment, and, to a lesser extent, menopausal symptoms, affect sexual satisfaction independently from sexual function. [58] Moreover, various personality variables, relationship quality, current and long-term goals, sexual role ideologies, overall life purpose and several other factors may also play a key role in the same in sexual satisfaction in women.

Higher levels of female satisfaction are associated with higher percentages of marital happiness and lower levels of serious mental illness, risky sexual behaviours, social crimes, and divorces. [23] A lack of sexual satisfaction is more common in women compared to men as women are severely impacted by tasks such as their occupation, child rearing and other family and community responsibilities. [24] Despite sexual life and satisfaction of a couple being vital components of the overall marital happiness, the role of sexual satisfaction in wives of patients suffering from long-term disorders and diseases remains understudied. The sex life of a couple is an essential component of their marital relationship; however, few studies have explored this aspect during chronic illnesses. An understanding of the impact of the same on disease states is an area of unmet therapeutic need. Therefore, this study explores the sexual satisfaction in wives of PWE.

Sexual satisfaction is considered a vital aspect of overall sexual health. Several studies have repeatedly shown the detrimental effects that sexual problems can have on relationship satisfaction and how it can lead to interpersonal distress. [56,57,59] Several scales have been developed to measure sexual satisfaction including the Global measure of Sexual Satisfaction (GMSEX), New Sexual Satisfaction Scale (NSSS), Sexual Satisfaction Scale for Women (SSS-W), Index of Sexual Satisfaction (ISS), the Golombok-Rust Inventory of Sexual Satisfaction (GRISS), and Female Sexual Function Index (FSFI). These scales and tools are self-reporting tools, available separately for men and women and are shown to have reliability, validity, and consistency. [60,61,62] In the present study, the Sexual Satisfaction scale for women (SSS-W) has been used to measure sexual satisfaction in female spouses of male PWE. The SSS-W is a self-reporting 30 item questionnaire composed of five domains viz. contentment (sexual and emotional aspects of relationship), communication

(discussing sexual and emotional issues), compatibility (between sexual beliefs, preferences, desires and attraction), relational concern, and personal concern. A factor analysis and validity testing shows that the SSS-W has consistency and sound psychometric properties. [59]

From the standpoint of the Indian subcontinent, few studies have explored the sexual dysfunction in PWE. A single-centre, cross-sectional study conducted in a tertiary care hospital in Puducherry found that 60% of the PWE suffered from sexual dysfunction. This study suggests a multifactorial causation for this dysfunction. Psychosocial factors affecting social development, self-esteem, and sexual arousal, in addition to the physiological effects of epileptic discharges in brain regions mediating sexual behaviour, may contribute to sexual dysfunction. [22] Both marriage and family are major sources of social support and predictors of health of patients with chronic diseases. [63] In India where the burden of care predominantly falls on the wives, it is important to assess the impact of living with a PWE on the quality of life, marital satisfaction, and in particular sexual satisfaction of the spouse. Studies indicate that sexual dysfunction is common in epilepsy and impacts quality of life and family relationships; however, few PWE seek professional help for this issue. [64]

A study exploring the relationship between psychological well-being and self-reported sexual satisfaction in women found that the PGWB (Psychological General Well-Being) and domain scores for positive well-being and vitality were lower in sexually dissatisfied women compared to sexually satisfied women, indicating sexual dissatisfaction was correlated with psychological well-being. [53] In response to intervention to improve their sexual satisfaction women with sexual dissatisfaction and low well-being exhibited improved general wellbeing. [53] These findings

reinforce the need to address sexual health and wellbeing in women, especially since most of them are the primary caregiver for PWEs.

While many other factors have been widely explored in previous studies, the impact of such epilepsy-induced sexual dysfunction on the sexual lives of the partners of PWE remains largely unexplored. Few studies about marital quality and sexual satisfaction of wives of PWE have been conducted. [65] Given the significant gaps in literature concerning female sexual behaviour and attitudes surrounding sexuality in India [20], this study would be an attempt to assess the sexual satisfaction of the wives of PWE in the city of Belagavi over a one-year period. This study therefore aims to increase the awareness of sexual dysfunction as a common yet under-diagnosed condition in PWE and help manage this comorbidity. Ultimately, the findings of this study could lead to better therapeutic interventions that help improve the quality of life of both PWE and their caregivers.

MATERIALS AND METHODS

Study design: Cross-sectional study

Study population: The wives of patients with epilepsy visiting Department of Neurology or Department of Psychiatry at KLEs Prabhakar Kore Charitable Hospital, Belagavi

Duration of study: The study was conducted from 1st January 2021 to 31st December 2021.

Sample Size:

As no similar study has been done before, we assume the prevalence to be 50%

Using $4pq/ r^2$

p=50, q=100-50=50

r=10% (absolute error)

Sample size=100

Sampling methodology: Non-probability purposive sampling is chosen because of suitable accessibility and proximity of the sample population to the researcher.

Cases: Wives of patients with epilepsy (N=100) visiting the Department of Neurology or Department of Psychiatry at KLEs Prabhakar Kore Charitable Hospital, over a period of one year.

Selection of cases:

Inclusion Criteria:

1. Women between ages of 18-45 years.
2. Those who give informed consent.

Exclusion criteria:

1. Women suffering from a major medical or psychiatric illness.

2. Women with gynaecological complaints that impair sexual satisfaction like dyspareunia, vaginismus, anorgasmia.

Data collection technique:

A semi structured proforma was used to obtain socio-demographic details and other relevant details from wives as well as epileptic husbands. Participants were subjected to mental status examination to rule out any psychiatric comorbidity. Gynaecological comorbidities were ruled out during history taking and clinical assessment.

Interview:

Though the tools used in this study could have been self-administered the low literacy among the wives selected for this study necessitated interviewing them using the semi-structured/structured questionnaire.

The sample population was subjected to clinical history taking to rule out gynaecological comorbidities.

Clinical assessment:

Clinical examination was done to rule out gynaecological comorbidities.

Data collection tools:

A semi structured proforma was used to obtain socio-demographic details and clinical history and other relevant details.

Self-report by wives was used to assess baseline sexual dissatisfaction and satisfaction.

The wives included in the study were then assessed on 2 scales:

- Sexual Satisfaction Scale-Women (SSS-W)
- Kansas Marital Satisfaction Scale (KMSS)

1) Sexual satisfaction scale for Women (SSS-W)

This was developed with the intention of providing insight into sexual satisfaction and sexual distress of women. It was made with the intention of benefiting clinicians and researchers alike, in understanding sexual satisfaction in women and how it impacts sexual functioning. It has been used to measure sexual satisfaction of wives of PWE. It is a self-reporting 30 item questionnaire composed of five domains namely contentment (sexual and emotional aspects of relationship), communication (discussing sexual and emotional issues) compatibility (between partners in sexual beliefs, preferences, desires, and attraction), relational concern and personal concern. Each domain comprises of 6 questions with Likert-scale like responses ranging from 1 to 5. The domain scores range from a minimum score of 6 to a maximum score of 30. The total SSS-W score is calculated using the formula:

(Contentment+ Communication+ Compatibility+ (Relational Concern + Personal Concern/2)).

In factor analysis and validity testing the SSS-W scale has exhibited consistency and sound psychometric properties. [66]

2) Kansas Marital Satisfaction Scale

Marital satisfaction can be assessed with self-rated instruments such as Dyadic Adjustment Scale (DAS), Marital Satisfaction Inventory (MSI), Quality Marital Index (QMI) and Marital Adjustment Test (MAT) etc. The current study uses the Kansas Marital Satisfaction Scale (KMSS). This Scale was designed to assess one's level of satisfaction towards his/her own marriage. Kansas Marital Satisfaction Scale has undergone detailed studies on its psychometric properties and found to be valid, reliable, and widely used in research. Schumm WR et al concluded that KMSS will serve as a useful brief measure of marital satisfaction. Due to its established psychometric property and brief and easily administrable nature of this measure, the author selected this scale for this piece of research.

Data collection:

Ethical clearance was obtained from the institutional ethical committee. Before the study all participants were given a thorough explanation of the purpose of the study in their vernacular language and a written informed consent was obtained.

Data analysis:

The socio-demographic data were compared by obtaining the frequency distribution of the variables using one-way tables and expressing them as percentages. Statistical analysis was done using Microsoft Excel 2019 and SPSS 23. Student's unpaired t test was used to assess sexual satisfaction and marital satisfaction. Fisher's exact test was used to assess the association between sexual satisfaction in wives and sexual dysfunction in PWE. Chi square test was used to find the association between qualitative variables of factors influencing satisfaction. A p value of <0.05 was considered statistically significant.

RESULTS

TABLE 1: SOCIODEMOGRAPHIC PROFILE OF STUDY POPULATION

Demographic Variables		Frequency (Percentage) N=100
Age (years)	31-40	49 (49%)
	≥41	34 (34%)
	≤30	17 (17%)
Education	Intermediate/Diploma	49 (49%)
	Graduation	22 (22%)
	Higher secondary	15 (15%)
	Primary	08 (08%)
	Secondary	06 (06%)
Occupation	Working	66 (66%)
	Home-maker	34 (34%)

Table 1 shows the frequency and the percentage distribution of the women study participants according to their socio demographic variables. The majority of the study participants were in their thirties (49%) followed by 34% of those who were ≥41 years and 17% of who were ≤30 years. 49% received an intermediate/diploma level education followed by 22% with graduation followed by higher secondary, primary and lastly only 6% of the study population receiving secondary level education. The majority (66%) of the population was working with the rest (34%) being home-makers.

TABLE 2: OVERALL SEXUAL SATISFACTION AS REPORTED BY WIVES OF PWE

Sexual Satisfaction	Frequency (Percentage) (N=100)
Present	59 (59%)
Absent	41 (41%)

Table 2 shows the frequency distribution of overall sexual satisfaction and dissatisfaction per self-report by wives of PWE. 59% of wives were satisfied with their sexual lives. 41% of wives reported overall sexual dissatisfaction.

TABLE 3: DOMAIN WISE SCORES OF DIFFERENT DOMAINS AND FULL-SCALE SCORE OF SEXUAL SATISFACTION SCALE FOR WOMEN (SSS-W) IN STUDY POPULATION

Domains Of SSS-W And Full Scale Score	Sexual Satisfaction Present (n=59)	Sexual Satisfaction Absent (n=41)	
	MEAN ± S.D.	**MEAN ± S.D.**	**P Value**
Contentment	19.16 ± 3.00	17.95 ± 3.01	***0.0249**
Communication	19.11 ± 2.78	17.95 ± 3.18	***0.0256**
Compatibility	17.16 ± 2.75	16.99 ± 3.32	0.7796
Concern- Relational	12.88 ± 2.55	12.08 ± 2.39	0.1161
Concern- Personal	13.50 ± 2.74	12.98 ± 2.39	0.3112
SSS-W Full Scale Score	66.07 ± 5.93	65.71 ± 5.10	0.7512

*$p<0.05$ was considered statistically significant

Table 3 shows the comparison of various domains of SSS-W between wives with present and absent sexual satisfaction. All the domains as well as the total score were higher in wives who reported sexual satisfaction however only the differences in contentment domain (p=0.0249) and the communication domain (p=0.0256) were found to be statistically significant.

TABLE 4: INDIVIDUAL QUESTION AND TOTAL SCORES IN KANSAS MARITAL SATISFACTION SCALE (KMSS) IN STUDY POPULATION

Questions In KMSS	Sexual Satisfaction Present (n=59)	Sexual Satisfaction Absent (n=41)	
	MEAN ± S.D	MEAN ± S.D	P Value
How Satisfied Are You With Your Marriage?	5.19 ± 1.33	4.99 ± 1.36	0.4595
How Satisfied Are You With Your Husband As A Spouse?	5.44 ± 1.21	4.81 ± 1.47	***0.0262**
How Satisfied Are You With Your Relationship With Your Husband?	4.97 ± 1.33	4.84 ± 1.55	0.6574
KMSS Full Scale Score	15.60 ± 2.03	14.64 ± 2.57	***0.0476**

**p*<0.05 was considered statistically significant

Table 4 shows the comparison of individual questions of KMSS between wives with present and absent sexual satisfaction. All the questions as well as the total score were higher in wives who reported sexual satisfaction however only question regarding satisfaction with husband as a spouse (p=0.0262) and total scale score (p=0.0476) were found to be statistically significant.

TABLE 5: ASSOCIATION OF SEXUAL DYSFUNCTION IN PWE WITH SEXUAL SATISFACTION IN WIVES

	Sexual Dysfunction Present In PWE (Percentage)	**Sexual Dysfunction Absent In PWE (Percentage)**	**Total**	**P Value**
Sexual Satisfaction Present In Wives	3 (5.084)	56 (94.91)	59	
Sexual Satisfaction Absent In Wives	39 (95.12)	2 (4.87)	41	***<0.0001**
Total	42	58	N=100	

*p<0.05 was considered statistically significant

Table 5 shows association between sexual dysfunction in PWE and sexual satisfaction in wives. Among wives with sexual satisfaction 94.91% of husbands did not have sexual dysfunction while 5.08% of husbands had sexual dysfunction. Among wives with sexual dissatisfaction 95.12% of husbands had sexual dysfunction and 4.87% of husbands did not have sexual dysfunction. This was found to be statistically significant with a p value <0.0001.

TABLE 6: TYPE OF SEXUAL DYSFUNCTION IN PWE AMONG WIVES WITH ABSENT SEXUAL SATISFACTION

Type Of Sexual Dysfunction In PWE Among Wives With Absent Sexual Satisfaction (n=39)	Frequency	Percentage
Erectile Dysfunction	6	15.36%
Loss Of Libido Of Husband	8	20.51%
Premature Ejaculation	8	20.51%
Premature Ejaculation+Erectile Dysfunction	11	28.20%
Premature Ejaculation+Erectile Dysfunction+Loss Of Libido Of Husband	6	15.36%

Table 6 shows the type of sexual dysfunction in PWE among wives with absent sexual satisfaction**.** Majority of wives reported both premature ejaculation an erectile dysfunction to be the main cause for dissatisfaction (28.20%) This was followed by loss of libido of husband (20.51%), premature ejaculation (20.51%), erectile dysfunction (15.36%) and a combination of premature ejaculation, erectile dysfunction, and loss of libido (15.36%)

TABLE 7: ASSOCIATION BETWEEN AGE OF PWE WITH SEXUAL SATISFACTION IN WIVES

Age Of PWE (Years)	**Sexual Satisfaction Present (n=59)**	**Sexual Satisfaction Absent (n=41)**		
	Frequency (Percentage)	Frequency (Percentage)	Total	P Value
≤30	13 (22.03)	8 (19.51)	21	0.7860
31-40	31 (52.54)	20 (48.78)	51	
≥41	15 (25.42)	13 (31.71)	28	

*p<0.05 was considered statistically significant

Table 7 shows association between age of PWE and sexual satisfaction in wives. Majority of husbands (52.54%) were between 31-40 years of age in those with sexual satisfaction and majority (48.78%) were between 31-40 years in those without sexual satisfaction. Among PWE ≥ 41 years, 25.42% wives had sexual satisfaction while 31.71% did not have sexual satisfaction. In the age group ≤30 years 22.03% wives had sexual satisfaction and 19.51% did not have sexual satisfaction. Age of PWE did not have a statistically significant association with sexual satisfaction.

TABLE 8: ASSOCIATION BETWEEN TYPE OF EPILEPSY IN PWE AND SEXUAL SATISFACTION IN WIVES

Type Of Epilepsy	**Sexual Satisfaction Present (n=59)**	**Sexual Satisfaction Absent (n=41)**		
	Frequency (Percentage)	Frequency (Percentage)	Total	P Value
Generalized-Tonic Clonic	36 (61.02)	39 (95.12)	75	***0.0001**
Partial-Complex	23 (38.98)	2 (4.88)	25	

**p*<0.05 was considered statistically significant

Table 8 shows association between type of epilepsy in PWE and sexual satisfaction. Generalized tonic-clonic epilepsy was found in 61.02% of wives with sexual satisfaction and 95.12% with sexual dissatisfaction. Partial complex epilepsy was found in 38.98% of wives with sexual satisfaction and 4.88% of wives with sexual dissatisfaction. Thus, type of epilepsy was found to have a statistically significant association with sexual satisfaction (p=0.0001).

TABLE 9: ASSOCIATION BETWEEN NUMBER OF ANTIEPILEPTIC DRUGS AND SEXUAL SATISFACTION IN WIVES

Number Of Antiepileptic Drugs	**Sexual Satisfaction Present (n=59)**	**Sexual Satisfaction Absent (n=41)**		
	Frequency (Percentage)	Frequency (Percentage)	Total	P Value
Multiple Antiepileptic Drugs	24 (40.68)	15 (36.59)	39	0.6798
Single Antiepileptic Drug	35 (59.32)	26 (63.41)	61	

*p<0.05 was considered statistically significant

Table 9 shows association between number of antiepileptic drugs used by PWE and sexual satisfaction. Among wives with sexual satisfaction 40.68% of husbands were on a multiple antiepileptic drug regime and 59.32% were on a single antiepileptic drug regime. In wives with sexual dissatisfaction, 36.59% of husbands were on multiple antiepileptic drugs and while majority (63.41%) of husbands were on single antiepileptic drug regime. There was no statistically significant association between number of antiepileptic drugs and sexual satisfaction (p=0.6798).

TABLE 10: ASSOCIATION OF SUBSTANCE USE IN PWE AND SEXUAL SATISFACTION IN WIVES

Substance Use	**Sexual Satisfaction Present (n=59)**	**Sexual Satisfaction Absent (n=41)**		
	Frequency (Percentage)	Frequency (Percentage)	Total	P Value
Yes	14 (23.73)	20 (48.78)	34	***0.0093**
No	45 (76.27)	21 (51.22)	66	

**p*<0.05 was considered statistically significant

Table 10 shows association of substance use in PWE and sexual satisfaction in wives. Among wives with sexual satisfaction 23.73% had husbands with substance use and 76.27% had husbands without substance use. Among wives without sexual satisfaction 48.78% had husbands with substance use and 51.22% had husbands without substance use. There was statistically significant association between substance use in PWE and sexual satisfaction in wives (p=0.0093).

TABLE 11: ASSOCIATION BETWEEN ORAL HEALTH IN PWE AND SEXUAL SATISFACTION IN WIVES

Oral Health In PWE	**Sexual Satisfaction Present (n=59)**	**Sexual Satisfaction Absent (n=41)**		
	Frequency (Percentage)	Frequency (Percentage)	Total	P Value
Adequate	56 (94.92)	36 (87.80)	92	0.1974
Poor	3 (5.08)	5 (12.20)	8	

*p<0.05 was considered statistically significant

Table 11 shows association between oral health in PWE and sexual satisfaction in wives. Among wives with sexual satisfaction 94.92% had husbands with adequate oral health and 5.08% had husbands with poor oral health. Among wives with sexual dissatisfaction 87.8% had husbands with adequate oral health and 12.20% had husbands with poor oral health. There was no statistically significant association between oral health and sexual satisfaction (p=0.1974).

TABLE 12: ASSOCIATION BETWEEN DURATION OF EPILEPSY IN PWE AND SEXUAL SATISFACTION

Duration Of Epilepsy	**Sexual Satisfaction Present (n=59)**	**Sexual Satisfaction Absent(n=41)**		
	Frequency (Percentage)	Frequency (Percentage)	Total	P Value
≤ 5 Years	12 (20.34)	9 (21.95)	21	0.7936
6 - 10 Years	27 (45.76)	16 (39.02)	43	
≥ 11 Years	20 (33.90)	16 (39.02)	36	

*p<0.05 was considered statistically significant

Table 12 shows the association between duration of epilepsy of PWE and sexual satisfaction in wives. Among wives with sexual satisfaction majority (45.76%) had husbands with duration of illness between 6-10 years. Among those with sexual dissatisfaction equal number of wives (39.02%) had husbands with duration between 6-10 years and ≥ 11 years. There was no statistically significant association with duration of epilepsy in PWE and sexual satisfaction (p=0.7936).

DISCUSSION

This study was based on a cross sectional descriptive study using existing validated tools to assess sexual satisfaction and factors influencing it in wives of PWE.

Though there are some studies in existing literature on the quality of life of the wives there is a dearth of literature pertaining to finer aspects of the quality of life of the wives like the marital and sexual satisfaction. To the best of our knowledge, there are no Indian studies assessing the sexual satisfaction in wives of PWE.

FINDINGS RELATED TO THE SOCIO-DEMOGRAPHIC VARIABLES OF SAMPLE POPULATION

AGE:

In our study population of 100 wives of PWE, 49% of wives were between the ages of 31 and 40 years, which represents a majority of the sample. This was followed by wives with age ≥ 41 years and wives with age ≤30 years. Wives with ages 18-45 were considered as the legal age for marriage is 18 years and those above 45 years of age are likely to have menopause and its associated complications which may influence sexual satisfaction. Although studies have been conducted regarding age distribution of epileptics none have assessed the age distribution of their wives. (Table 1)

EDUCATION:

Majority (49%) of the wives were educated up to an intermediate/diploma level, followed by 22% with a graduate level education, 15% with a higher secondary level education, 8% with primary level education and 6% with a secondary level

education. The education level of wives of PWE has not been studied previously. Most of our study population being from an urban background could be a reason for the higher level of education of most of the wives. (Table 1)

OCCUPATION:

In our study vast majority (66%) of wives were employed while the rest were homemakers. While the occupation status of wives of PWE has not previously been studied, a possible reason for the greater prevalence of employment could be the urban setting in which this study was conducted. (Table 1)

OVERALL SEXUAL SATISFACTION IN WIVES OF PWE

Our study employed self-report by wives as means to measure overall sexual satisfaction and dissatisfaction. Out of the sample population of 100 wives, 59 reported sexual satisfaction whereas 41 reported sexual dissatisfaction. As per our knowledge there have been no previous studies which have assessed the sexual satisfaction in this population, contributing to the uniqueness of this study. This could however represent a smaller than real value due to reluctance on part of wives to express their sexual satisfaction owing to the taboo nature of sexuality of women in India. Despite this nearly half of our samples reporting sexual dissatisfaction points towards the importance of not only screening for this when PWE come in contact with medical care providers but also finding solutions in the form of counselling programs and changing modifiable variables that could help rectify this problem. (Table 2)

ASSESSMENT OF SEXUAL SATISFACTION IN WIVES OF PATIENTS WITH EPILEPSY

The mean values of sexual satisfaction in wives of PWE were assessed on 5 sub-domains of the Sexual Satisfaction Scale for Women (SSS-W), namely: Contentment, Communication, Compatibility, Relational Concern and Personal Concern.

Within the contentment domain the satisfied group had a score of 19.16 ± 3.00 while the dissatisfied group had a score of 17.95 ± 3.01. Statistical analysis revealed these values to be significant (p value =0.0249). A study published by Hurlbert and colleagues talks about how women with happy marriages and marital contentment have a higher level of commitment leading to greater sexual satisfaction. [67] Our study found results in alignment with this study published by Hurlbert that contentment is significantly higher in those with more sexual satisfaction. The results were also found to be statistically significant which concludes that contentment with relationship is indeed a key factor in satisfaction at a sexual level.

With regards to the communication domain the satisfied group scored 19.11 ± 2.78. On the other hand, the dissatisfied group scored 17.95 ± 3.18. On application of Student's unpaired t tests there was statistically significant difference between these 2 groups (p value=0.0256). Our study found comparable results in the SSS-W scale that Hurlbert et al discuss regarding the importance of communication with respect to sexual satisfaction. [67] Davidson et al also stress about adequate sexual health and sexual relations ultimately contributing to better communication between partners. [53] In another study by Trudel G. et al among 996 Canadians good sexual communication was found to be the best indicator of sexual satisfaction. [68] Our study found

statistically significant association between communication and sexual satisfaction. Thus, improvement in communication between partners could lead to improvement in overall sexual satisfaction.

For the domain of compatibility, the satisfied group had a mean of 17.16 ± 2.75 and the dissatisfied group had a mean of 16.99 ± 3.32. Student's unpaired t test did not reveal a statistically significant difference between these two (p value=0.7796). Offman et al talk about the association of compatibility and sexual satisfaction. Women's perception of compatibility can be used to view their level of intimacy in a relationship, including sexual intimacy. [(69)] Compatibility being the third domain in the SSS-W scale was also found to be higher in those women with higher sexual satisfaction however this finding was not at a statistically significant level.

For relational concern which was the fourth domain the satisfied group showed a score of 12.88 ± 2.55 as the score whereas the dissatisfied group showed 12.08 ± 2.39 . This was not found to be statistically significant (p value=0.1161). The final domain focused on personal concern in which the satisfied group had a score of 13.50 ± 2.74. On the other hand, the dissatisfied group had a score of 12.98 ± 2.19. This was not found to be statistically significant (p value=0.3112). Giuliano et. al. talk about the place of feelings, romance and desire with respect to the overall satisfaction of women. [(56)] Our study is in alignment with this that those who have lesser concern at a personal level and lesser concern regarding their relationship were found to have greater sexual satisfaction. Although our findings lean in the direction of previous studies, the data was not found to be statistically significant.

The total SSS-W score was calculated and found to be 66.07 ± 5.93 for the satisfied group as compared to 65.71 ± 5.10 for the dissatisfied group. On application of Student's unpaired t test these values were not found to be statistically significant (p value=0.7512). (Table 3)

Thus, the findings of our study go towards our initial hypothesis of wives of PWE having lower levels of sexual satisfaction.

ASSESSMENT OF MARITAL SATISFACTION IN WIVES OF PATIENTS WITH EPILEPSY

The overall marital satisfaction was further analysed using Kansas Marital Satisfaction Scale.

Among the 3 questions which the scale is comprised of for the score considering satisfaction with marriage the mean was found to be 5.19 ± 1.33 for the satisfied group which when compared to the dissatisfied group was 4.99 ± 1.365. This showed a better score in those with sexual satisfaction. However on statistical analysis this was not found to be significant (p value =0.4595). Davidson SL et al and Tellez-Zenteno JF et al talk in their respective papers about the importance of a solid relationship for the achievement of sexual satisfaction in both partners. [53,55] Our study is in accordance with these studies that state that, satisfaction with marriage as a relationship contributes greatly to a healthy sexual life in both partners.

For score concerning satisfaction with husband as a spouse mean was 5.44 ± 1.21 for the satisfied group and 4.81 ± 1.47 for the dissatisfied group which was found to be statistically significant upon analysis with Student's unpaired t test (p value =

0.0262). This is also in alignment with studies done by Davidson and Tellez-Zenteno. [53,55]

The last question which talks about the overall relationship satisfaction with their husband, the satisfied group scored 4.97 ± 1.33 and the dissatisfied group scored 4.84 ± 1.55 while which was not found to be statistically significant (p value = 0.6574). A higher score was seen in those with sexual satisfaction, supported by other studies. [53,55]

When overall score on Kansas Marital Satisfaction Scale was considered, the results were found to be significant on statistical analysis (Student's unpaired t test) with dissatisfied group having score of 14.64 ± 2.57 and satisfied group having score of 15.6 ± 2.03.(p value = 0.0476) (Table 3)

Mahrer-Imhof and colleagues talk about marriage being a prime source of social support and a predictor of overall health. [63]

While all 3 questions in the scale (satisfaction with marriage, satisfaction with husband as spouse and overall relationship satisfaction) showed a lower score in the dissatisfied group, only the question concerning satisfaction with husband as a spouse was found to be statistically significant. However, the overall total score on the Kansas Marital Satisfaction scale was found to be statistically significant in favour of our initial hypothesis.

This scale has never previously been applied for the marital satisfaction of wives of PWE.

This is in alignment with the findings of our study which show that lower marital satisfaction is associated with lower sexual satisfaction.

ASSOCIATION OF SEXUAL DYSFUNCTION IN PWE AND SEXUAL SATISFACTION IN WIVES

Among wives with sexual satisfaction majority of husbands (94.91%) did not have any sexual satisfaction. On the other hand, in wives with sexual dissatisfaction majority of husbands (95.12%) had some form of sexual dysfunction. The statistically significant p value (<0.0001) shows that sexual dysfunction in PWE is associated with sexual satisfaction in wives. As per our knowledge there have been no studies which have studied this till date.

REASONS FOR DISSATISFACTION AMONG DISSATISFIED WIVES

Among wives with sexual dissatisfaction whose husbands had sexual dysfunction, 28.20% of wives reported both premature ejaculation and erectile dysfunction to be the cause for dissatisfaction as compared to only premature ejaculation and only loss of libido in husband which were reported by 20.51% of wives each. This was followed by wives who reported all three of premature ejaculation, erectile dysfunction, and loss of libido of husband at 15.36% and those who reported only erectile dysfunction at 15.36%. The findings of our study are in alignment with those of Arackal BS et al who report a 72% prevalence of some form of sexual dysfunction in PWE. The most common among these being premature ejaculation, loss of libido and erectile dysfunction [(49)]. Rathore C and colleagues report 10-20% prevalence of loss of libido among PWE [(36)] A significantly higher probability of developing erectile dysfunction in PWE is also reported by Braun et al [(29)]. The findings of our study show similar rates of sexual dysfunctions as existing literature. (Table 6)

FACTORS IMPACTING SEXUAL SATISFACTION IN WIVES OF PATIENTS WITH EPILEPSY

The study assessed the association of age, type of epilepsy, number or drugs, substance use, temperament and personality, oral health, and duration of illness among PWE with overall sexual satisfaction or dissatisfaction among wives of our sample population.

AGE

Among satisfied wives 22.03% had husbands ≤ 30 years, 52.54% had husbands between 31-40 years and 25.42% had husbands with age ≤41 years. On the other hand, in the group of dissatisfied wives 19.51% had husbands ≤ 30 years, 48.78% had husbands between 31-40 years and 31.71% had husbands with age ≤41 years. The p value was found to be 0.7860 which was not statistically significant. Beghi et al found an increased incidence of epilepsy due to epileptogenic conditions increasing with age and the aging process itself contributing to the condition [(70)]. However, our study found the majority of PWE to be in their thirties and no particular worsening of sexual dysfunction as age of PWE progresses. A possible reason for this could be age distribution of local population. (Table 7)

TYPE OF EPILEPSY

Among wives with sexual satisfaction 61.02% had husbands with generalized tonic-clonic epilepsy while 38.08% had husbands with partial-complex epilepsy. On the other hand 95.12% of wives with sexual dissatisfaction had husbands with generalized tonic-clonic epilepsy and only 4.88% had husbands with partial-complex epilepsy. The p value was found to be 0.0001 which was found to be statistically

significant. (Table 8). Laumann et al. report that those who suffer from temporal lobe epilepsy have a four times greater likelihood of having sexual dysfunction than those with generalized epilepsy [37]. Studies done by Jensen P and colleagues and Daniele A and colleagues suggest that dysfunction of sexual nature is seen more commonly in temporal lobe epilepsy [39,40]. This suggests a higher likelihood of those having partial complex epilepsy to have sexual dysfunction. However, this study found contradictory results that while type of epilepsy had a statistically significant association with sexual satisfaction, those suffering from generalized tonic clonic epilepsy were more likely to have unsatisfied wives. This is possibly due to more of our samples having generalized tonic clonic epilepsy as compared to partial complex epilepsy.

NUMBER OF ANTIEPILEPTICS

Among wives with sexual satisfaction 40.58% of PWE were on a multiple antiepileptic regime while 59.32% of PWE were on a single antiepileptic regime. When compared with wives with sexual dissatisfaction 36.59% had husbands on multiple antiepileptics and 63.41% has husbands on a single antiepileptic. The p value was 0.6798, which was not statistically significant. (Table 9) Studies show that adverse effects of antiepileptic medication are particularly prominent in those receiving polytherapy [71]. Brodie MJ and colleagues in their research found that reduction in number of antiepileptic drugs or changing to single antiepileptic drug led to improvement in cognitive and behavioural symptoms in epileptics [72]. Our study found those whose husbands were on single antiepileptic medication reported more sexual dissatisfaction as compared with those on multiple antiepileptic drugs. The possible reason for the contrasting results of our study and existing data could be due

to emergence of newer antiepileptics with a smaller number of side effects and a shift in clinical practice to avoid polypharmacy unless epilepsy is refractory.

SUBSTANCE USE

In the group of wives with sexual satisfaction 23.73% had husbands with substance use and 76.27% had husbands without substance use. In the group of wives without sexual satisfaction, 48.78% had husbands with substance use whereas 51.22% had husbands without substance use. The p value was 0.0093 which was found to be statistically significant. (Table 10)

In this study, we have considered only those who had established epilepsy before diagnosis of alcohol dependence to avoid overlap of those with alcohol withdrawal seizures. Chan AW in his study found alcohol dependence in 12–36% of PWE [(48)]. Arackal and colleagues found almost 72% of those with alcohol dependence to have some form of sexual dysfunction [(49)]. However no study till date has considered the effect of substance use particularly alcohol use among epileptics on their sexual functioning. The effect of this in turn on satisfaction of wives has also not been assessed. Our study found this to be a statistically significant factor. In accordance with the above-mentioned studies, those PWE having substance use particularly alcohol use showed wives with greater sexual dissatisfaction.

ORAL HEALTH

When oral health of the PWE was analysed, in the group of wives with sexual satisfaction 94.92% had adequate oral health and 5.08% had poor oral health. When this factor was compared in wives with sexual dissatisfaction 87.80% husbands had

adequate oral health and 12.20% had poor oral health. The p value was found to be 0.1974 which was not statistically significant. (Table 11)

In a study done by Karolyhazy K et al, when compared to nonepileptic population, epileptic population tends to exhibit worse oral health [(50)]. Drugs like phenytoin also tend to cause gingival hyperplasia further contributing to loss of teeth, gum surgery and thus avoidance by wives [(42)]. This study however did not find a statistically significant association between oral health and oral hygiene and sexual satisfaction among the wives. The reason for this could be limited use of phenytoin these days with the introduction of newer antiepileptics which have a better side effect profile. The advancement in dental science over the last decade could also be a contributing factor for majority of PWE having adequate oral health.

DURATION OF ILLNESS

When the factor of duration of illness of PWE was analysed, in the group of wives with sexual satisfaction, majority (45.76%) of PWE had epilepsy for 6-10 years followed by those with duration ≥ 11 years and then those with duration ≤ 5 years. On the other hand, in the group of wives without satisfaction 21.95% had a duration of ≤ 5 years, 39.02% had a duration of 6-10 years and 39.02% had duration ≥ 11 years. p value was found to be 0.7936, which was not statistically significant. (Table 12)

Edefonti et al in a study conducted in Italy discussed the association of longer duration of epilepsy with poorer overall quality of life in epileptics [(73)]. This also correlates with quality of sexual life including sexual dysfunction. Although there have not been any studies directly assessing the association between duration of epilepsy in men and sexual dysfunction in them, Karan V et al, in a study done in

India found a positive correlation between duration of the illness and sexual dysfunction in women suffering from epilepsy [41]. Our data is in alignment with these studies. Although this factor is understudied our research did not find statistical association between duration of epilepsy and sexual satisfaction in wives.

CONCLUSION

Though epilepsy and the burden associated with it have been extensively studied, there is a dearth in the existing literature pertaining to the burden placed on wives of those suffering from epilepsy. Our nation places an inordinate amount of the load associated with caregiving on the wives of those with chronic illnesses. This study assessed finer aspects of the same, particularly the sexual and marital satisfaction of wives of PWE.

- The current study found that nearly half of wives of those with epilepsy had overall sexual dissatisfaction.
- Those with sexual dissatisfaction had lower contentment and communication.
- Satisfaction with husband as a spouse was found to be significantly lower in those with sexual dissatisfaction. Overall sexual dissatisfaction was also found to be associated with lower marital satisfaction.
- Type of epilepsy and substance use in husbands were found to be significant factors affecting sexual satisfaction in their wives.
- Among wives who self-reported sexual dissatisfaction, erectile dysfunction, premature ejaculation, and loss of libido were the predominant types of sexual dysfunctions in their husbands.
- This study has future implications both for clinical practice and psycho-social research.

STRENGTHS AND LIMITATIONS

The study has the following strengths:

1. One of the first studies done in India to assess the sexual satisfaction in wives of PWE.

2. Substantial sample size.

3. Sexual satisfaction and marital satisfaction are considered in conjunction with each other.

The findings of this study should be considered within its limitations

1. Our study being a cross sectional study does not follow up PWE or their wives along further course of illness.

2. Non-probability purposive sampling was implemented.

3. Wives may not have been comfortable giving accurate answers due to taboo nature of female sexuality in India.

4. The PWE themselves were not interviewed, with reports about them being only from their wives.

SUMMARY

- The study was conducted to assess intricate aspects of caregiving burden like sexual and marital satisfaction in wives of PWE.
- The author conducted a cross-sectional study for this purpose of assessing sexual satisfaction in wives of male epileptics.
- The participants were interviewed based on semi-structured proforma to obtain socio-demographic details and were divided into two groups on basis of self-reporting for overall sexual satisfaction or dissatisfaction
- These two groups were then subjected to two scales, The Sexual Satisfaction Scale for Women (SSS-W) to assess sexual satisfaction and the Kansas Marital Satisfaction (KMSS) scale to assess marital satisfaction.
- The scores obtained on scales between two groups were then compared.
- Furthermore, the factors in husbands with epilepsy affecting sexual satisfaction in wives was assessed.
- The study found nearly half of the sample to self-report sexual dissatisfaction.
- The scores for contentment and communication in the SSS-W were found to be significantly lower for those with sexual dissatisfaction.
- Those with sexual dissatisfaction reported poorer satisfaction with their husband as a spouse and poorer overall marital satisfaction.
- Type of epilepsy of husband and presence of substance use were found to be significant factors associated with sexual dissatisfaction among wives.
- Erectile dysfunction, premature ejaculation, and loss of libido in husbands were main causes for sexual dissatisfaction among wives.

In the future this study could be continued, and the wives could be followed up to assess the impact of course of epilepsy in husbands and possible change of anti-epileptic medication on the sexual satisfaction in their wives. The findings of this study could be used to develop screening tools to help identify these issues much earlier in PWEs and the effect it has on their wives. It could further be used to innovate counselling programs and other treatment options in this field.

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Wife's age (years)	Wife's education	Wife's occupation	Sexual satisfaction-Present	CONTENTMENT	COMMUNICATION	COMPATABILITY	CONCERN RELATIONAL	CONCERN PERSONAL	SSS-W FULL SCALE SCORE	KMSS Q1	KMSS Q2	KMSS Q3	KMSS FULL SCALE SCORE	Sexual dysfunction	Husband's age (years)	Type of epilepsy	No. of AED	Substance use	Oral health	Duration of illness (years)
31-40	Higher secondary	employed	Yes	19	16	19	16	10	67	6	5	4	15		≥41	Partial-complex	Multiple	NO	ADEQUATE	≤5
≤30	Intermediate/Diploma	homemaker	Yes	21	21	13	15	19	72	6	5	4	15		31-40	Partial-complex	Single	NO	ADEQUATE	≤5
31-40	Graduation	employed	No	18	18	11	17	11	61	5	5	7	17		≥41	Generalized-tonic clonic	Single	YES	POOR	6-10
31-40	Graduation	employed	No	20	17	18	11	11	66	8	5	4	17	Premature ejaculation, Erectile dysfunction	≥41	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
31-40	Intermediate/Diploma	homemaker	No	17	18	15	13	11	62	7	7	5	19	Premature Ejaculation, Loss of libido of husband	31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
≤30	Graduation	employed	Yes	16	23	18	16	13	71	4	4	7	15		31-40	Partial-complex	Single	NO	ADEQUATE	≤5
31-40	Graduation	homemaker	No	19	16	14	12	13	62	5	5	3	13	Premature ejaculation, Erectile dysfunction	≥41	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
31-40	Intermediate/Diploma	employed	Yes	14	21	16	14	14	65	3	4	5	12		31-40	Partial-complex	Single	NO	ADEQUATE	≤5
≥41	Graduation	homemaker	Yes	15	21	12	13	13	61	6	7	6	19		≥41	Partial-complex	Multiple	NO	ADEQUATE	≤5
≥41	Intermediate/Diploma	employed	No	23	17	20	15	15	75	7	7	7	21	Premature ejaculation, Erectile dysfunction	≤30	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
31-40	Intermediate/Diploma	employed	Yes	19	19	20	15	10	70	3	3	4	10		31-40	Generalized-tonic clonic	Single	YES	POOR	≤5
≥41	Primary	homemaker	No	18	20	20	9	12	68	4	6	6	16	Loss of libido of husband	≥41	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
31-40	Graduation	employed	Yes	20	15	22	10	8	66	6	6	3	15		≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	≤5
≥41	Higher secondary	employed	Yes	15	12	17	11	9	54	6	3	5	14		31-40	Partial-complex	Multiple	NO	ADEQUATE	≤5
≥41	Intermediate/Diploma	employed	Yes	21	18	17	13	14	69	7	4	6	17		≤30	Partial-complex	Single	NO	ADEQUATE	≤5
31-40	Primary	homemaker	Yes	19	19	15	14	15	67	4	5	5	14		31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	≤5
31-40	Intermediate/Diploma	employed	No	21	16	15	14	11	65	5	7	4	16	Loss of libido of husband	≥41	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
≥41	Higher secondary	homemaker	No	19	16	16	13	13	64	5	6	7	18	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
31-40	Intermediate/Diploma	employed	No	21	16	15	14	11	65	5	7	4	16	Loss of libido of husband	≥41	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
≥41	Higher secondary	employed	No	19	16	16	13	13	64	5	6	7	18	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
≤30	Graduation	employed	Yes	16	15	16	13	11	59	3	6	6	15		31-40	Partial-complex	Single	NO	ADEQUATE	≤5
≥41	Intermediate/Diploma	employed	No	17	18	16	13	16	66	5	5	4	14		≤30	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	Yes	15	19	22	11	15	69	4	4	4	12		31-40	Partial-complex	Single	YES	ADEQUATE	≤5
31-40	Higher secondary	homemaker	Yes	15	12	18	12	17	60	6	4	4	14		31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
31-40	Intermediate/Diploma	employed	Yes	20	14	12	14	11	58	7	5	6	18		≥41	Partial-complex	Single	NO	ADEQUATE	≥11
≤30	Graduation	homemaker	No	12	14	17	11	11	54	6	3	7	16	Premature ejaculation	31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
≥41	Secondary	employed	No	13	20	19	10	13	63	5	5	4	14	Premature ejaculation, Erectile dysfunction	≥41	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
31-40	Primary	homemaker	Yes	20	17	22	9	13	71	6	4	5	15		31-40	Generalized-tonic clonic	Multiple	NO	POOR	≥11
≥41	Higher secondary	employed	No	21	17	19	11	16	70	4	6	4	14		≤30	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
≤30	Intermediate/Diploma	employed	No	16	16	17	8	17	62	7	5	4	16	Premature ejaculation	31-40	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
31-40	Graduation	homemaker	Yes	13	27	19	12	15	72	5	5	7	17		≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
≤30	Intermediate/Diploma	employed	Yes	23	18	22	16	16	79	3	3	7	13		≤30	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	No	22	19	21	14	11	74	3	6	7	16	Erectile dysfunction	31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
31-40	Higher secondary	homemaker	Yes	22	21	18	18	10	75	6	4	7	17		≥41	Generalized-tonic clonic	Single	YES	ADEQUATE	≥11
31-40	Intermediate/Diploma	employed	Yes	19	24	16	15	13	72	4	4	5	13		≤30	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	homemaker	No	20	20	17	12	13	69	4	5	5	14	Premature ejaculation	31-40	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
≤30	Graduation	homemaker	Yes	21	24	12	20	12	72	4	5	7	16		≥41	Generalized-tonic clonic	Single	YES	ADEQUATE	≥11
31-40	Intermediate/Diploma	employed	No	15	18	23	15	13	70	7	5	4	16	Erectile dysfunction	≤30	Partial-complex	Single	YES	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	Yes	17	25	22	11	20	79	4	6	3	13		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Intermediate/Diploma	employed	Yes	20	19	17	10	13	67	7	7	8	22		≥41	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Higher secondary	homemaker	No	13	16	18	15	11	60	4	7	4	15	Premature ejaculation	31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	≥11
≤30	Graduation	employed	Yes	20	18	17	11	12	67	4	6	5	15		≤30	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	No	21	21	14	8	13	67	3	7	6	16	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	≥11
31-40	Higher secondary	employed	Yes	14	17	13	12	12	56	6	4	5	15		≥41	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	homemaker	Yes	21	19	16	13	16	71	4	4	5	13		≤30	Partial-complex	Single	NO	ADEQUATE	≥11
≥41	Secondary	employed	Yes	14	18	15	12	13	59	3	3	3	9		31-40	Partial-complex	Single	YES	ADEQUATE	≥11
≤30	Intermediate/Diploma	homemaker	No	20	18	18	14	14	70	6	3	5	14	Premature ejaculation, Erectile dysfunction, loss of libido of husband	≥41	Generalized-tonic clonic	Single	YES	POOR	≥11
31-40	Primary	homemaker	Yes	20	15	10	13	10	57	4	5	3	12		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	No	17	16	18	6	14	61	6	5	6	17	Loss of libido of husband	≥41	Partial-complex	Multiple	YES	ADEQUATE	≥11
31-40	Higher secondary	employed	Yes	19	18	17	9	18	68	3	5	7	15		31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	≥11

≥41	Intermediate/Diploma	employed	Yes	24	18	14	14	10	68	4	4	4	12		31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
31-40	Higher secondary	homemaker	Yes	19	18	17	11	12	66	7	6	5	18		31-40	Generalized-tonic clonic	Multiple	YES	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	No	15	27	21	16	14	78	5	5	3	13	Premature ejaculation	≥41	Partial-complex	Multiple	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	Yes	22	16	14	10	14	64	5	6	5	16		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Graduation	employed	Yes	17	17	13	13	16	61	3	4	2	9		≥41	Generalized-tonic clonic	Multiple	YES	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	No	18	18	15	11	9	61	5	5	3	13	Loss of libido of husband	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
≤30	Secondary	employed	No	19	14	19	10	15	65	7	5	5	17	Premature ejaculation, Erectile dysfunction, loss of libido of husband	31-40	Generalized-tonic clonic	Multiple	NO	POOR	≥11
31-40	Primary	homemaker	Yes	16	18	23	14	13	70	6	5	6	17		≥41	Partial-complex	Single	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	Yes	16	21	12	19	16	66	5	6	5	16		≤30	Generalized-tonic clonic	Multiple	NO	ADEQUATE	6-10
≤30	Intermediate/Diploma	employed	No	20	17	19	8	13	66	3	5	5	13	Premature ejaculation	31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
31-40	Secondary	employed	Yes	18	18	20	9	15	68	4	5	6	15		≤30	Partial-complex	Single	YES	ADEQUATE	6-10
≤30	Higher secondary	homemaker	Yes	19	19	22	11	12	72	3	6	4	13		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
31-40	Graduation	employed	Yes	11	14	18	10	14	55	5	6	5	16		≤30	Generalized-tonic clonic	Multiple	NO	ADEQUATE	6-10
31-40	Graduation	employed	No	17	21	19	14	14	71	6	6	5	17	Erectile dysfunction	≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
≤30	Intermediate/Diploma	employed	Yes	17	14	22	16	14	68	6	5	4	15		31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	homemaker	No	17	20	19	16	11	70	6	7	4	17	Loss of libido of husband	≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Higher secondary	homemaker	Yes	16	18	20	13	14	68	6	6	4	16		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	Yes	18	21	19	15	19	75	4	6	5	15		≤30	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
≤30	Graduation	employed	Yes	15	15	13	12	12	55	7	7	2	16		31-40	Partial-complex	Multiple	NO	ADEQUATE	6-10
≥41	Primary	homemaker	No	15	18	21	12	14	67	4	4	5	13	Premature ejaculation	≥41	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Intermediate/Diploma	employed	Yes	23	18	20	9	9	70	4	7	3	14		≥41	Generalized-tonic clonic	Multiple	NO	ADEQUATE	6-10
31-40	Intermediate/Diploma	homemaker	No	20	16	16	14	11	65	5	7	6	18	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
≥41	Intermediate/Diploma	employed	Yes	15	15	18	12	12	61	5	2	7	14		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
31-40	Graduation	employed	Yes	17	19	18	10	13	66	5	6	7	18		31-40	Partial-complex	Multiple	NO	ADEQUATE	6-10
31-40	Higher secondary	homemaker	Yes	16	14	19	14	12	62	2	7	5	14		≤30	Generalized-tonic clonic	Multiple	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	Yes	19	18	14	18	12	65	4	3	5	12		31-40	Generalized-tonic clonic	Single	YES	ADEQUATE	6-10
31-40	Intermediate/Diploma	employed	No	17	19	19	13	12	68	4	5	6	15	Erectile dysfunction	≥41	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Intermediate/Diploma	homemaker	No	15	19	23	11	14	70	4	6	5	15	Erectile dysfunction	31-40	Generalized-tonic clonic	Multiple	NO	POOR	≥11
≥41	Higher secondary	employed	No	23	19	15	11	13	69	3	5	7	15	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
31-40	Intermediate/Diploma	homemaker	No	15	19	23	11	14	70	4	6	5	15	Erectile dysfunction	31-40	Generalized-tonic clonic	Multiple	NO	POOR	≥11
≥41	Higher secondary	employed	No	23	19	15	11	13	69	3	5	7	15	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≥11
≤30	Intermediate/Diploma	employed	No	24	18	15	11	10	67	8	5	5	18	Premature ejaculation	31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≥11
31-40	Graduation	employed	Yes	14	21	14	14	15	63	5	4	5	14		31-40	Partial-complex	Single	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	homemaker	No	15	22	18	16	14	69	6	4	4	14	Premature ejaculation, Erectile dysfunction, loss of libido of husband	≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	≤5
31-40	Higher secondary	homemaker	Yes	14	16	11	14	15	55	6	5	4	15		31-40	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
31-40	Intermediate/Diploma	employed	Yes	14	15	14	13	15	57	3	5	3	11		≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
≤30	Intermediate/Diploma	homemaker	Yes	22	19	15	15	15	71	7	5	6	18		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	No	21	20	14	11	12	66	4	7	4	15	Loss of libido of husband	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≤5
≥41	Secondary	employed	Yes	20	16	15	9	13	62	5	6	5	16		≥41	Generalized-tonic clonic	Multiple	YES	ADEQUATE	6-10
31-40	Graduation	homemaker	Yes	14	23	17	8	14	65	7	6	2	15		31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	6-10
31-40	Graduation	employed	Yes	18	18	20	14	17	71	7	6	4	17		≥41	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
31-40	Intermediate/Diploma	employed	No	17	19	13	13	16	63	5	4	4	13	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≤5
31-40	Intermediate/Diploma	employed	No	14	14	14	10	16	55	4	4	4	12	Loss of libido of husband	≥41	Generalized-tonic clonic	Single	NO	POOR	≤5
≥41	Intermediate/Diploma	employed	Yes	24	15	18	14	10	69	5	1	7	13		31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	6-10
31-40	Primary	homemaker	Yes	18	11	20	16	14	64	7	4	7	18		≥41	Partial-complex	Multiple	NO	POOR	6-10
≥41	Intermediate/Diploma	employed	No	14	11	16	10	19	56	4	6	4	14	Premature ejaculation, Erectile dysfunction, loss of libido of husband	≥41	Partial-complex	Multiple	NO	ADEQUATE	≤5
≤30	Intermediate/Diploma	employed	Yes	17	20	20	13	12	70	7	6	4	17		31-40	Partial-complex	Single	NO	ADEQUATE	6-10
31-40	Graduation	employed	No	16	24	15	11	12	66	5	5	7	17	Premature ejaculation, Erectile dysfunction, loss of libido of husband	31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≤5
31-40	Graduation	homemaker	Yes	21	12	17	11	13	62	4	3	4	11	Premature ejaculation, Erectile dysfunction	31-40	Partial-complex	Single	NO	ADEQUATE	6-10
≥41	Intermediate/Diploma	employed	Yes	19	19	14	13	13	64	6	3	3	12	Loss of libido of husband	≥41	Partial-complex	Single	NO	ADEQUATE	6-10
31-40	Graduation	employed	Yes	18	20	17	11	19	70	6	4	2	12	Erectile dysfunction	≥41	Partial-complex	Multiple	NO	ADEQUATE	6-10
31-40	Secondary	employed	No	22	17	18	11	12	69	7	5	3	15	Erectile dysfunction	31-40	Generalized-tonic clonic	Multiple	NO	ADEQUATE	≤5
31-40	Primary	homemaker	No	15	17	16	12	14	61	7	5	5	17	Premature ejaculation, Erectile dysfunction	31-40	Generalized-tonic clonic	Single	NO	ADEQUATE	≤5
31-40	Intermediate/Diploma	employed	No	18	21	14	15	9	65	5	6	7	18	Loss of libido of husband	≤30	Generalized-tonic clonic	Single	NO	ADEQUATE	≤5