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A Study on Quality and Quantity of Sleep Disturbances Associated with their Quality of Life in Psychiatric Patients

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Abstract: ***All India Institute of Medical Sciences (AIIMS) said sleep disturbances at present affects 5-10% of general population in India. 5% Indians aged 50 years and above suffering from sleep problems.Mostly sleep problems are insomnia. A prospective and observational study was conducted,in this study 300 psychiatry patients were examined lively for sleep disturbances and quality of life among them 60% are male and 40% are female cases. Patients divided into three categories based on adult age parameter 25-35years, 36-45years and 46-55years, patients and randomly collected psychiatry disorders cases with anhistory of 1-15 years duration.Mostly patients present with the symptoms of insomnia(36%), loss of appetite(9%), depression and hallucinations(15%).Sleep disturbances are seen in 25 -55 years patients, who's scoring based on sleep revolution questionnaires score. Maximum sleep disturbances are seen in 25-35 age groups and majorly seen in males compared to females. Major reason for sleep disturbances and quality of life impairment is due to backward life and social, environment and occupational history. The current study highlights the importance of sleep in psychiatric disorder patients in adult age groups.Basedon our study insomnia should be addressed in psychiatry disorder patients, including its long term impact on health and quality of life.***

Keywords: Sleep quality and quantity, sleep revolution questionnaires scoring, quality of life

1. Introduction

Now a days one of the most prevalent sleep disorder occurring in general population was found to be an Insomnia. Over past decades it has been increasing dramatically and affecting all age groups and races.Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity inhibition of nearly an voluntary muscle and redIuces interaction with surrounding normalize brain function.[1]

Insomnia is an perception of inadequate or poor sleep leads to daytime sleepiness,lethargy and a general feeling of being unwell, both mentally and physically. It is not defined by number of hours of sleep a person gets, it is a measure of satisfaction with sleep[2]. Mood swings, irritability, social dysfunction and fatigue are common associated symptoms[3].

Types of insomnia:[4]

- **Acute Insomnia:** Last for less than three months and is often related in time to an identifiable causes.
- **Chronic Insomnia:** Which last for a months or longer, person has trouble in falling a sleepatleast three nights per week for three months or longer.
- **Comorbid Insomnia:** Results with psychiatric symptoms like anxiety, depression are know to be associated with changes in sleep.
- **Maintenance Insomnia:** Inability to stay asleep. People with maintenance insomnia wake up during the night and have difficulty returning to sleep.
- **Onset of Insomnia:** Difficult falling asleep at the beginning of night.

Relationship between Mental illness and Insomnia[5,6,7]

Insomnia is a cardinal symptom for many psychiatric disorders, especially depressive disorders because sleep and mental health are closely connected. Sleep deprivation mainly affects your psychological state and mental health. Mental health refers to cognitive, behavioral and emotional wellbeing. About 40% of patients who seek medical help for sleeping problems have a psychiatric condition. To an extent sleep quality can be a barometer of mental health. For this reason, psychiatric always enquire about sleep behavior when making a diagnosis. Sleep disorder often coexist with anxiety, panic disorders, depression, ADHD, schizophrenia, and bipolar disorder[5,6]. Many studies show that patients with mental health disorders experience changes in their sleep architecture ,often many individuals spend more time in lighter, less restorative stages of sleep, and less time in critically important deep and REM stages of sleep .Getting less sleep and spending insufficient time in deeper parts of sleep makes the patients so frustrating , anger and discomfort. To initiate sleep the brain will increase feelings of "sleepiness", thereby decreasing a person's ability to concentrate. Lack of good sleep contributes to reduced concentration, short-term memory, learning ability, and behavioral self control.[5,7]

Pathophysiology of Insomnia in Psychiatric:[8]

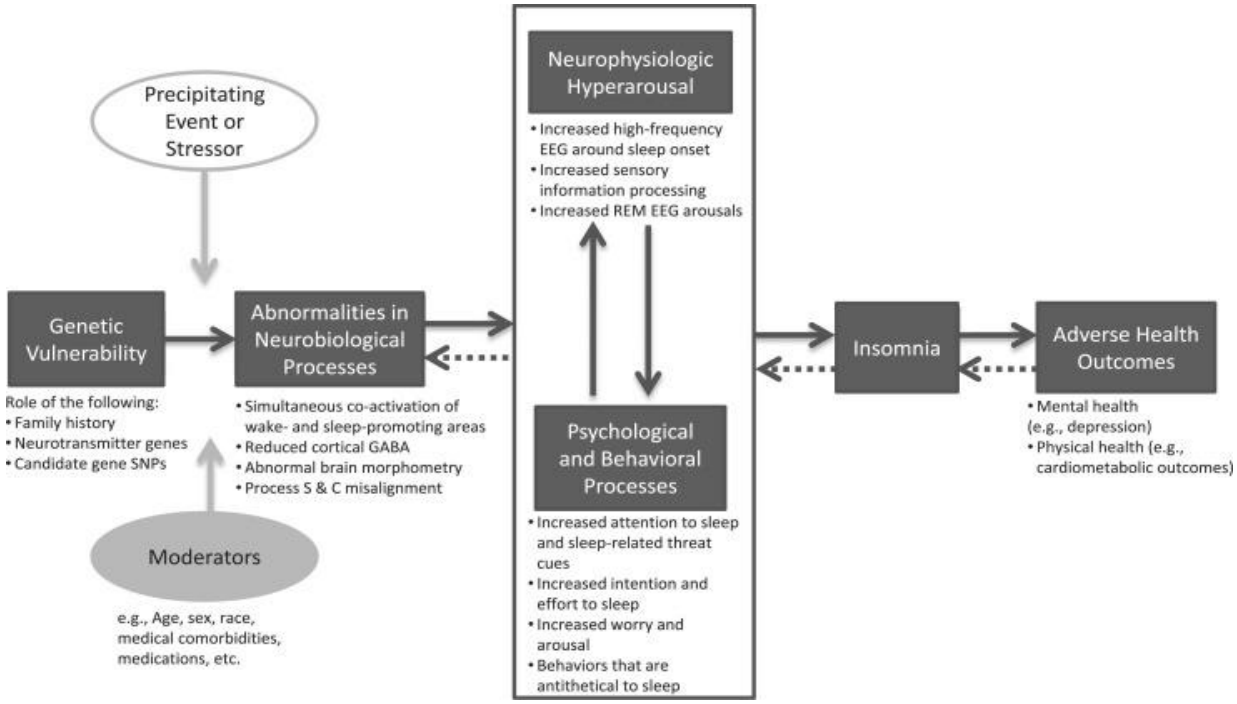
Hyperarousal

Insomnia is often considered as disorder of hyper arousal with an increased somatic, cognitive and cortical activation. Individuals with insomnia may experience physiological hyper arousal in both ventral and peripheral nervous system, also be refer to cognitive, emotional process suggesting that it may leads to both acute and chronic insomnia.

Molecular mechanism of sleep and insomnia

Numerous sleep regulatory substances are mostly linked to circadian rhythmic and sleep regulation.In that that endogenous molecule can be categorized as primarily wake-promoting /sleep suppressing substances (catecholamine ,histamines)and sleep promoting /wake suppressing

substances (serotonin, melatonin, GABA) .GABA in occipital cortex of patients with insomnia mostly reported to have consistent with hyper arousal model of insomnia.



Relationship between Psychiatric and Quality of life:[9,10]
In psychiatric,quality of life has been considered as important aspects of mental health. It emphasized based on impact of patient's environment and subjective appraisals of psychiatric symptoms and life problems .With the increasing awareness and focusing on treatment outcome and patient satisfaction in health care ,the construct of QOL has become an important area of investigation. It is defined as multidimensional construct of well being and function of individuals pertaining to physical, emotional, social, mental, and behavioural components.

Benefits of lifestyle changes in psychiatric sleep: [11,12]
According to National Institute on Mental Health, healthy lifestyle activities lead to psychological well-being. Having anxiety and depression is harder to for psychiatric patients to wake up and exercise. No specific diet for bipolar disorder. Meditation and intake of melatonin containing foods, vitamins, magnesium contain promote good sleep.

2. Methodology

2.1 Materials and Methods

It is a multicentered prospective and observational study designed to evaluate the quality and quantity of sleep disturbances associated with psychiatric patients.The present study was conducted at MGMH, Tertiary care hospital, Warangal, Telangana, India. This study was conducted over a period of 6 months from September 2018 to February 2019 on 300 subjects. After completion literature review on several articles in psychiatric department this study was done. Subject selection of both male and female of age group 25 -55 of psychiatric disorders based on inclusion and exclusion criteria. Adult age group with psychiatric disorder patients was included. Subjects with neurodegenerative, cardiovascular and kidney disease, pediatric, geriatric and pregnant patients were excluded in this study. Quality and quantity of sleep along with quality of life was monitored in 300 patients. It is done by through sleep revolution questionnaires by interacting with patients. The questionnaire was translated into patient specific language.The questionnaire consist of 3 section and it contain open-ended and close- ended questions. The first section includes taking information on socio-demographic details (age, gender, occupational, social and normal vitals levels). Second section consists of 1- 14 questions with scoring and third section consist medications. Each questionnaire measures a specific patient sleep disturbances and 9th questionnaire measures quality of life.

Response is categorized as scoring 0 to 9- insomnia, 10 to 18 - bad sleep, 19 to 27- good sleep, 28 to 35 - satisfied sleep. Data was collected by face to face interviewing of patients for 15- 30 minutes, during ward round in tertiary hospital.

3. Results

- This study provides a unique examination of sleep quality with their impact on quality of life in psychiatric patients. Based on sleep questionnaire scoring psychiatric patients were separated into 4 categories : Insomnia, Bad sleep, Good sleep, Very good sleep.
- A total number of 300 patient were selected and undergone sleep revolution questionnaires out of 120 (40%) were women,180 (60%) were male.Overall psychiatric patient experience (36%) of disturbed sleep, (14%) of self talking and laughing and(2%) less symptom of fear and alcohol with drawl symptoms.SRQ scoring from question 3-11 suggest than both gender score in between 0-2 score showing that poor quality of sleep that leading to impair concentration and mood disturbances

results in impair quality of life.Sleep disturbances are seen in patients, aged 25 -55 years,who's scoring based on sleep revolution questionnaires score were SRQ score ≥ 9 insomnia is (**37%)**, SRQ score ≥ 18 bad sleep is (31%), SRQ ≥27 good sleep is (24%),SRQ score ≥35 Very good sleep is (8%).

- The(mean and standard deviation) scoring of 3-11 questionnaire of female patients are found to be 34.3 ± 8.2 for score **-0**, 13.3± 5 for score-**1**, 23.8± 6.8 for score-**2**,24.5± 6.9 for score-**3**, 15.1 ± 5.4 for score-**4**.
- The (mean and standard deviation) scoring of 3-11 questionnaire of male patients are found to be 57.8 ± 10.7 for score-**0**, 28.1±7.4 for score-**1**, 32.5± 8.0 for score-**2**, 40.2± 8.9 for score-**3**, 20.8 ± 6.3 for score-**4**.
- In female and male patients score-**0** are found to be higher than the other scores. Scoring of male patient are found to higher than female for questionnaire 3-11. This shows male patients are more prone to sleep disturbances than female.

4. Discussion

The results of present study show that people aged (adults 25-35 years) age groups are more compensated by the sleep disturbances and sleep quality. Sleep environment has shown to affect sleep quality and duration, factors associated such as noise,light exposure and also social factors like alcohol and smoking and health worries, stress affect sleep quality.Higher average sleep revolution score >9 were significantly associated with poor sleep quality and quantity. Sex difference were evident in analyses that female exhibit significant lower sleep disturbances than male. Relationship between both insomnia quality and quantity were seen with quality of life. However there was an impact of age on quality of life,as age increases there was increases in risk of quality of life, but in our study we observed that quality of life was impaired in patients aged 25-35years (44%). Quality of life was affected in 142 patients (47%) who scored scoring-2, occupational and social history was also decreased in patients that examine the impact on patients quality of life.All selected patients were prescribed with medicationdue to poor economy some patients were not adhering to medication that leading to chronic stages of insomnia. To date there is lack of awareness and support for pharmacological treatment to lower the risk of sleep disturbances. While non pharmacological interventions for sleep disturbances were outside the scope of this review. It is important to maintain a regular sleep cycle, don't try to make yourself sleepy, go to bed and get up at regular times, avoid heavy meals, consumption of alcohol before going to bed and avoid napping during the day. Based on statistical analysis (Mean and Standard deviation)males are more prone to sleep disturbances that impacting on quality of life.Insomnia should be addressed in wellness programming in psychiatric disorder patients, including its long term impact on health and quality of life.

5. Conclusion

Based on this study, sleep disturbances and quality of lifeare impaired in (25-35) age groups of psychiatric patients,so not only treating their psychiatric disorder and sleep impairment,they also focus on their life span,social habitual,daily life activity etc which helps us to improve patient condition.Sleep can be impaired in any age groups compare to older age groups, adults are also affecting more sleep disturbances[14].so, earlydetection of symptoms and prevention is needed.

6. Abbreviation

QOL – Quality of life, SRQ – Sleep Revolution Questionaries, REM – Rapid Eye Movement, ADHD – Attention Deficit Hyperactive disorder, GABA- Gamma Amino Butryic Acid. M±SD – Mean and Standard deviation.

7. Acknowledgment

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8. Conflict of Interest

The author declares no conflict of interest.

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Figures and Tables

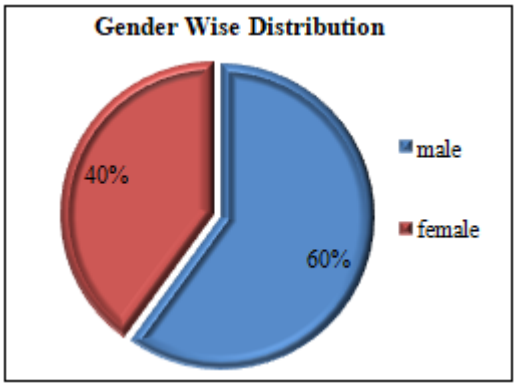

Figure 1: Gender wise distribution

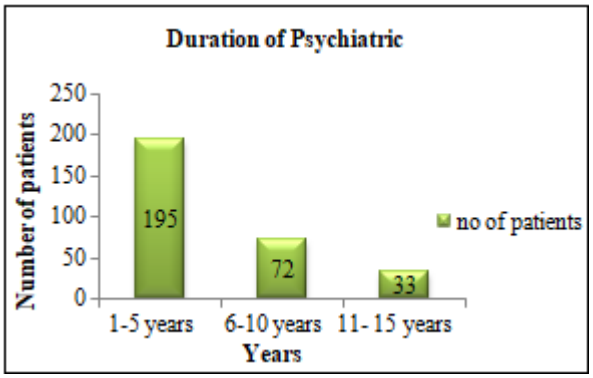

Figure 2: Duration of Psychiatric Disorder

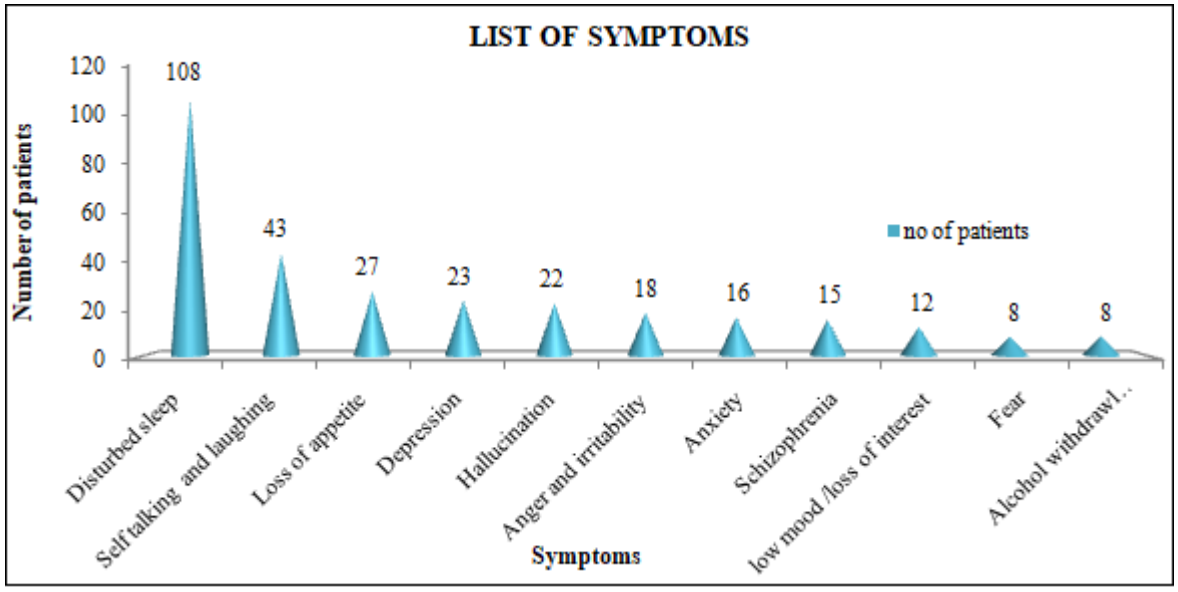

Figure 3: List of Symptoms

Table 1: Categorisation based on Gender and Occupation

	Male	Female
No of participants	**180 (60%)**	**120(40%)**
Working	77 (42%)	53 (44%)
Non working	103 (57%)	67 (55%)

Table 2: Social status

Social status	No of male participants(180)	Present history	Past history
Alcohol	96	27	69
Smoking	8	3	5
Alcohol and smoking	16	4	12
Non alcohol and smoking	60	0	0

Table 3: Categorisation of participants based on questionnaire and score (300)

Age group	Score 0	Score 1	Score 2	Score 3	Score 4
25-35	7	25	67	46	2
36-45	5	25	30	40	2
46-55	0	17	12	21	5

Table 4: Categorisation based on sleep condition and age group

Sleep condition	No of participants	Age group (years)	No of participants of respective age groups.		
			overall	Male	Female
Insomnia	112	25-35	38	26	12
		36-45	47	35	12
		46-55	27	16	11
Bad Sleep	91	25-35	50	30	20
		36-45	27	14	13

		46-55	14	06	08
Good Sleep	72	25-35 36-45 46-55	27 35 11	15 20 07	12 15 04
Very Good	25	25-35 36-45 46-55	8 11 09	04 05 06	04 06 03

Table 5: Categorization of quality of life based on ninth question (300)

Age group	Score 0	Score 1	Score 2	Score 3	Score 4
25-35	7	25	67	46	2
36-45	5	25	30	40	2
46-55	0	17	12	21	5

Table 6: Categorization of female participants (120) based on questionnaires and scores

Question No	Score No- 0	Score No- 1	Score No-2	Score No- 3	Score No- 4
03	44 (32%)	23(16%)	9(6%)	29 (21%)	15(12%)
04	30 (22%)	22 (18%)	9 (6%)	24 (17%)	35(25%)
05	11(8%)	26(21%)	44 (36%)	33(24%)	6(4%)
06	52(38%)	8(5%)	30(25%)	22 (16%)	8 (5%)
07	8 (5%)	22 (18%)	38 (31%)	45(37%)	7 (5%)
08	1 (0.7%)	8(5%)	29 (24%)	47 (39%)	35(25%)
09	5(4%)	20(16%)	41(34%)	50(41%)	4(3%)
10	40 (29%)	5 (4%)	22 (16%)	27(19%)	26(19%)
11	117(86%)	1 (0.7%)	0	2(1%)	0

Table 7: Categorization of male participants (180) based on questionnaires and scores

Question No	Score No- 0	Score No- 1	Score No-2	Score No- 3	Score No- 4
03	78(43%)	23(12%)	22(12%)	38(21%)	19(10%)
04	61(33%)	36(20%)	16(8%)	26(14%)	41(22%)
05	19(10%)	55(30%)	56(31%)	41(22%)	9(5%)
06	86(47%)	23(12%)	27(15%)	33	11(6%)
07	11(6%)	51(28%)	65(36%)	43(23%)	10(5%)
08	1(0.5%)	13(7%)	34(18%)	68(37%)	64(35%)
09	79(43%)	47(26%)	64(35%)	57(31%)	5(2%)
10	78(43%)	5(2%)	21(11%)	47(26%)	29(16%)
11	177(98%)	0	0	3(1.6%)	0

Table 8: Categorisation of participants based on questionnaire and score (300)

Question No	Always	Sometimes	Never
12	27 (9%)	128 (42%)	145 (48%)
13	17 (5%)	101(33%)	182 (60%)
14	45 (15%)	215(71%)	40 (13%)

Table 9: Statistical results (mean, standard deviation) of female (120) and male participants (180) based onscoring of questionnaire 3-11

Scoring	Score 0	Score 1	Score 2	Score 3	Score 4
Female (M±SD)	34.3±8.2	13.3±5	23.8±6.8	24.5±6.9	15.1±5.4
Male (M±SD)	57.8±10.7	28.1±7.4	32.5±8	40±8.9	20.8±6.3

In female and male patients score 0 are found to be higher than the other scores. M±SD of male patient are found to higher than female for questionnaire 3-11. This shows male patients are more prone to sleep disturbances than female.

Questionnaire page1 &2

VAAGDEVI PHARMA

PROJECT TITLE : A STUDY ON QUAL
DISTURBANCES ASSOCIATED WITH THEIR
PATIENTS

Patient name :

Gender :

Age :

O/E :

BP : PR:

QUESTIONN

1. When do you usually go to bed in the night___
2. When do you wake up in the morning _____
3. How many minutes do you need to fall asleep

   0_15 min , 16_30 mints , 31_45 min , 45
   4 , 3 , 2 ,
4. If you wake up one / more times during the ni

   0-15 min , 16-30 min , 31-45 min , 4
   4 , 3 , 2 ,
5. How often do u think that your sleep is distur

   Not at all , A little , Some what ,
   4 , 3 , 2 ,
6. How many nights a week do you have a probl

   0 - 1 , 2 , 3 , 4
   4. , 3 , 2 , 1
7. During Few weeks how would you rate your s

   Very good , fairly good , Bad ,
   4 , 3 , 2 ,
8. Trouble in sleeping because you cannot breath

   Not at all , A little , some what , Much
   4, 3 , 2 , 1 ,
9. Did it affected your mood, energy, relationshi

   Not at all , A little , some what , Much
   4 , 3 , 2 , 1
10. How long do you have a problem with your sleep.

    I don't have a problem/ <1M , 1 -2M, 3- 6M
    4 , 3 , 2
11. Do you take medication for sleep? (Y/N). If Yes,

    , Once in a week , Thrice a Week , a week, Mor
    3 , 2 , 1 ,
12. Do you have painful muscle cramps in legs / arms w
13. Do you experience numbness or tingling of your ar
    sleep at night.
14. Fallen asleep during the night. (Applicable for 11;1

    Always , Sometimes, Never .

NOTE:

Total score is 35

0 - 9: Insomnia

10 -18: Bad sleep (sleep disturbanc

19 - 27: Good sleep ,but there are sti
make it better.

28 - 35: Your sleep is in great shape
doing.

MEDICATIONS: