

Prevalence of Psychiatric Comorbidities in Patients with Irritable Bowel Syndrome; Their Quality of Sleep and Dream Pattern

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ABSTRACT

BACKGROUND

Irritable Bowel Syndrome (IBS) is a common functional gastrointestinal disorder. Goal was to find the prevalence of psychiatric co-morbidities in IBS, and assess their sleep quality and dream pattern. Association between psychiatric co-morbidities, sleep quality and dream pattern were also assessed.

METHODS

This is a cross sectional study done in 100 patients diagnosed with IBS attending the OPD of Department of Gastroenterology, Government Medical College, Thrissur, from June 2017 to July 2018. Performa includes the socio-demographic details, SCID-5 questionnaire, Pittsburgh Sleep Quality Index (PSQI) and pragmatic questionnaire for assessing dreams. Statistical analysis was done using chi square test, p value was set at < 0.05 using Statistical Package for the Social Sciences (SPSS).

RESULTS

78% of study subjects had psychiatric comorbidities and 51% had poor sleep quality. 79% of the sample reported having dreams; among them 18% dreamt about pain, 15% dreamt about their bowels, 12% dreamt about other abdominal symptoms, 14% dreamt about toilets and 9% dreamt about soiling themselves. Significant association was noted between different psychiatric co-morbidities and sleep quality, also with various dream patterns.

CONCLUSIONS

Our analysis shows psychiatric co-morbidities and poor sleep quality has significant association with dreams in IBS patients. Possibility of using dream pattern as a prognostic indicator in IBS has to be studied further.

KEYWORDS

Irritable Bowel Syndrome, Anxiety, Depression, Dreams

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BACKGROUND

Irritable bowel syndrome (IBS) is a common functional gastrointestinal disorder characterised by abdominal pain and abnormal transit conditions in the absence of a detectable organic illness.¹ The pathophysiology of IBS is not well comprehended and thought to be of multi-factorial aetiology. Global prevalence of IBS is 11% with female predisposition.^{1,2} Brain-gut axis is the neuro-anatomic substrate on which the psychosocial factors influence the gastrointestinal tract and vice versa; its dysregulation results in the pathogenesis of IBS.³ Literature puts forwards high prevalence of several psychiatric disorders in patients with IBS, particularly anxiety and mood symptoms with a prevalence of 31.4% and 37.1% respectively.^{4,5,6} Chronic inflammation and brain gut axis dysfunction describe the association between IBS and psychiatric disorders.⁷ Sleep related problems are common in functional gastrointestinal disorders.^{8,9}

Dreams are subjective experience during sleep, consists of complex and organized images that show temporal progression. It's a tendency for people to experience dreams related to issues that are currently 'on their minds' or about which they are particularly anxious. REM sleep seems to be the typical and an optimal physiological condition in which fully realized dreams are brought about.¹⁰ The psychological aspects of patients with IBS with emphasis on sleep and dream pattern is less studied especially in our part of south India. In this setting our attempt to assess the prevalence of psychiatric illness, the quality of sleep and dream pattern in patients with IBS would be worthwhile. Once an association between dream patterns, difference mental states and IBS could be established and replicated, the possibility of using patterns of dreams as a clinical tool can be considered and probed into in future.

METHODS

A hospital based cross sectional study was conducted among the patients diagnosed with IBS in between June 2017 to July 2018 in the Gastroenterology and Psychiatry outpatient clinic of Government Medical College, Thrissur after obtaining ethical clearance from Institutional Ethics Committee. One hundred subjects (taking prevalence of sleep disturbance in Irritable bowel syndrome as 57.2%¹¹) with diagnosis of irritable bowel syndrome using ROME IV criteria¹² were recruited for study after getting the written informed consent. Patients with disabling co-morbidities like cancer, neurodegenerative disorders or mental retardation and active psychosis, sleep disorders like primary insomnias, obstructive sleep apnoea and sleep related movement disorders, and those not giving consent were excluded from the study.

A Proforma was designed for collecting socio demographic details. Sleep disturbance in patients assessed

using Pittsburgh Sleep Quality Index (PSQI),¹³ assesses sleep quality over a 1-month time interval. Structured Clinical Interview for DSM 5 (SCID- 5) by American Psychiatric Association used in this study for current and previous psychiatric diagnoses,¹⁴ Dream pattern is assessed using pragmatic questionnaire used in a previous study.¹⁵ Two more questions are added to that questionnaire like when are you dreaming more? Do you have wishful dreams?

Data was analysed using descriptive statistics. Statistical analysis was done using Chi square test, p value was set at < 0.05 using Statistical Package for the Social Sciences (SPSS).

RESULTS

Among sample 54% were females, 84% below poverty line, 84% were literate, 95% from rural background, 51% had poor sleep quality. Significant association between dreaming about soiling themselves, about pain and sleep quality. Significant association found between emotionally disturbing content of dream, dreaming about bowels, pain, toilets and generalised anxiety & current major depression. Significant association found between emotionally disturbing content of dreams, dreaming about pain, toilets and persistent depressive disorder.

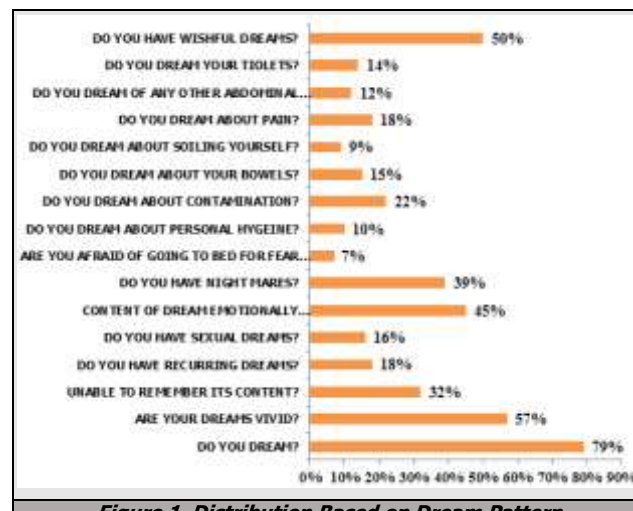


Figure 1. Distribution Based on Dream Pattern

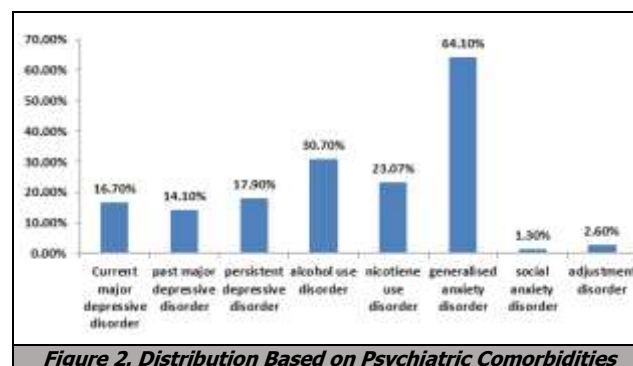


Figure 2. Distribution Based on Psychiatric Comorbidities

Variables	Frequency	%	
Age group in years	21 to 30	17	17%
	31 to 40	20	20%
	41 to 50	21	21%
	51 to 60	20	20%
	61 and above	22	22%
Gender	Male	46	46%
	Female	54	54%
Socioeconomic status	Below poverty line	84	84%
	Above poverty line	16	16%
Occupation	Student	8	8%
	Housewife	27	27%
	Manual labour	59	59%
	Govt. Servant	4	4%
	Professional	1	1%
Education	Business	1	1%
	Literate	84	84%
	Illiterate	16	16%
Marital status	Single	21	21%
	Married	69	69%
Diet	Remarried	3	3%
	Vegetarian	6	6%
Domicile	Non vegetarian	94	94%
	Rural	95	95%
Family	Urban	5	5%
	Nuclear	79	79%
Alcohol	Joint	21	21%
	Alcoholic	24	24%
Smoking	Non alcoholic	76	76%
	Smoker	18	18%
Psqi score	Non smoker	82	82%
	< 5	49	49%
	≥ 5	51	51%

Table 1. Sociodemographic Profile

	PSQI <5 (%)	PSQI ≥5 (%)	p
Do you dream?	37 (46.8%)	42 (53.2%)	0.401
Are your dreams vivid?	27 (47.4%)	30 (52.6%)	0.707
Do you dream, but are unable to remember its content?	16 (50.0%)	16 (50%)	0.891
Do you have recurring dreams?	6 (33.3%)	12 (66.7%)	0.142
Do you have sexual dreams?	9 (56.2%)	7 (43.8%)	0.527
Is the content of your dream ever emotionally disturbing?	18 (40%)	27 (60%)	0.103
Do you have nightmares?	17 (43.6%)	22 (56.4%)	0.387
Are you afraid of going to bed for fear of disturbing dreams?	2 (28.6%)	5 (71.4%)	0.254
Do you dream about personal hygiene?	3 (30%)	7 (70%)	0.205
Do you dream about contamination?	11 (50%)	11 (50%)	0.915
Do you dream about your bowels?	4 (26.7%)	11 (73.3%)	0.061
Do you dream about soiling yourself?	1 (11.1%)	8 (88.9%)	0.011
Do you dream about pain?	3 (16.7%)	15 (83.3%)	0.002
Do you dream of any other abdominal symptoms?	3 (25%)	9 (75%)	0.076
Do you dream about toilets?	6 (42.9%)	8 (57.1%)	0.620
Do you have wishful dreams?	26 (52%)	24 (48%)	0.548

Table 2. Association of Dream Pattern and Sleep Quality

	Current Generalised Anxiety Disorder Frequency & %	p	Current Major Depressive Disorder Frequency & %	p
Do you dream?	43 (86.0%)	0.086	12 (92.3%)	0.234
Are your dreams vivid?	31 (62.0%)	0.313	8 (61.5%)	0.723
Do you dream but are unable to remember its content?	13 (26.0%)	0.198	4 (30.76%)	0.919
Do you have recurring dreams?	11 (22.0%)	0.298	4 (30.76%)	0.199
Do you have sexual dreams?	8 (16.0%)	1.00	3 (23.07%)	0.456
Is the content of your dream ever emotionally disturbing?	28 (56.0%)	0.027	10 (76.92%)	0.013
Do you have nightmares?	23 (46.0%)	0.151	6 (46.15%)	0.571
Are you afraid of going to bed for fear of disturbing dreams?	3 (6%)	0.695	2 (15.38%)	0.204
Do you dream about personal hygiene?	7 (14.0%)	0.182	3 (23.07%)	0.092
Do you dream about contamination?	14 (28.0%)	0.148	5 (38.46%)	0.125
Do you dream about your bowels?	11 (22.0%)	0.050	5 (38.46%)	0.011
Do you dream about soiling yourself?	5 (10.0%)	0.727	3 (23.07%)	0.057

Do you dream about pain?	14(28.0%)	0.009	6(46.15%)	0.005
Do you dream of any other abdominal symptoms?	9(18.0%)	0.065	2(15.38%)	0.687
Do you dream about toilets?	11(22.0%)	0.021	5(38.46%)	0.006
Do you have wishful dreams?	25(50.0%)	1.000	6(46.15%)	0.766

Table 3. Association Between Generalized Anxiety Disorder, Current Major Depressive Disorder and Dream Pattern

	Persistent Depressive Disorder		p
	Frequency	%	
Do you dream?	14	100%	0.044
Are your dreams vivid?	9	64.28%	0.553
Do you dream, but are unable to remember its content?	6	42.85%	0.348
Do you have recurring dreams?	4	28.57%	0.267
Do you have sexual dreams?	3	21.42%	0.550
Is the content of your dream ever emotionally disturbing?	10	71.42%	0.032
Do you have nightmares?	6	42.85%	0.750
Do you dream about personal hygiene?	3	21.42%	0.124
Do you dream about contamination?	5	35.71%	0.182
Do you dream about your bowels?	4	28.57%	0.125
Do you dream about soiling yourself?	2	14.28%	0.456
Do you dream about pain?	6	42.85%	0.009
Do you dream of any other abdominal symptoms?	1	7.14%	0.546
Do you dream about toilets?	5	35.71%	0.012
Do you have wishful dreams?	7	50%	1.000

Table 4. Association Between Persistent Depressive Disorder and Dream Pattern

DISCUSSION

Sociodemographic Profile

In our study the mean age of the study population was 46.3±15.3 which is comparable to findings in other Indian studies^{16,17} The prevalence of IBS was higher in females (54%) compared to males (46%), which is similar to western studies. Previous studies from India reported a higher prevalence of IBS in males^{16,17,18,19} 84% of study subjects belonged to below poverty line and 95% are from rural background which is consistent with the findings from a rural Indian study^{17,20} With regard to educational status 84% of our samples were literate and 16% illiterate, which was similar to the findings Indian study.²¹ Occupational distribution of our study sample showed as majority were manual labourers (59%), followed by housewives (27%), students (8%) and government servants (4%). Business men and professionals constituted 1% of the sample. The result differs with the findings from an earlier Indian study which found IBS to be more common in sedentary workers.²²

Psychiatric Comorbidities

We found that 78% had psychiatric co-morbidities, among whom 64.1% had current generalised anxiety disorder, 30.7% had alcohol use disorder, 23.07% had nicotine use disorder, 16.7% had current major depressive disorder, 14.1% had past depressive disorder, 17.9% had persistent depressive disorder, 2.6% had adjustment disorder and 1.3% had social anxiety disorder. There are patients who are having more than one psychiatric diagnosis in the study. Anxiety and depression were high among in patients with IBS. Direction of causation of psychiatric co-morbidities and IBS is not understood from this study. We also noticed that

most of the psychiatric co-morbidities are not identified and addressed in IBS, for which liaison with psychiatry may be useful. Further studies are needed to find out the direction of causation and the effect of treatment of psychiatric co-morbidities in IBS with appropriate follow up designs.

Sleep Quality

In this study for evaluating the sleep disturbance in IBS, 51% had a global PSQI score >5, indicating poor sleep quality. Among those with poor sleep quality 54.9% were females. Only weak association was evident between gender and poor sleep quality. These results were in accordance with western studies.⁸ Another comparison study found high prevalence of IBS symptoms among irregular shift workers experiencing poor sleep quality.⁹ Cause of the sleep quality disturbance in IBS could be either due to IBS or due to psychiatric co-morbidities, which is not understood from the study. This can be clarified by appropriate designs. The effect of sleep hygiene or correction of sleep disturbance by drugs on the outcome of IBS has to be studied further.

Dream Patterns

Our attempt was to assess the dream pattern of IBS patients using a pragmatic questionnaire used in a previous study.¹⁵ Dream content analysis found that 79% of the study population had dreams, among which 15% dreamt about their bowels, 18% about their pain, 14% about toilets and 12% about other abdominal symptoms (like bloating, flatulence, regurgitation), 9% about soiling themselves, 22% dreamt about contamination and 10% about personal hygiene. Among the dreamers, 67.46% dreamt in late sleep or early morning, 30.12% in the middle of the sleep and 2.41% in the early sleep. According to our study, 15% of patients dreamt about their bowels, which is consistent with the findings from a comparison study.¹⁵ Our attempt to find association between dream patterns and sleep quality found statistically significant association with pain ($p=0.002$) and soiling themselves ($p=0.017$) in dreams, which could be a reason for repeated nocturnal awakenings in IBS patients resulting in poor sleep quality. According to our study, 32% of study population had difficulty in recalling the content of dreams. 68% were able to recall their dreams, among them 51.5% had poor sleep quality, their association showed no statistical significance. The results were inconsistent with the findings of other study, where dream recall frequency increases with poor sleep quality.²³

In the study sample statistically significant association was found between dreams having emotionally disturbing content ($p=0.027$), dream about their bowels ($p=0.05$), dreams about pain ($p=0.009$) and toilets ($p=0.021$) with current generalised anxiety disorder. It is found in studies that anxiety appear to play important roles as in symptom severity, symptom persistence, decisions for seeking treatment and also response to treatment.^{24,25} Statistically significant association was found between current major depressive disorder and dream patterns like emotionally disturbing content of dreams ($p=0.013$), dreaming about

bowels ($p=0.011$), about pain ($p=0.005$) and about toilets ($p=0.006$). Also statistically significant association was found between persistent depressive disorder and dream patterns like emotionally disturbing content of dreams ($p=0.032$) and dreams about pain ($p=0.009$) and dreams about toilets ($p=0.012$) in the study sample, which might be due to increased activity of limbic system during REM sleep which is supposed to involve in the processing of emotional memories as well as an emotion regulatory function during dreaming²⁶ It could also be due to the distress of IBS symptoms making them dream about these symptoms.

On evaluating the wishful content of dreams, we found different themes including building a house of their own, getting respectable jobs, happy marriage of their daughter or close relatives, going for a pilgrimage and happy harmony in family. Dream patterns in IBS showed significant association with psychiatric co-morbidities and poor sleep quality. However the outcome of IBS and various dream patterns cannot be explained from this study. The possibility of using dream pattern as a prognostic factor has to be studied further. To the best of our knowledge this study was first to evaluate dream patterns in IBS patients in Indian population. The study found statistically significant association between generalised anxiety disorder, current major depression, persistent depressive disorder, sleep quality and dream patterns in IBS patients.

The study was conducted in a tertiary care centre which caters patients largely from a rural background, which may not be the exact representation of the community. So the generalisability of the results was limited. A cross sectional dream pattern assessment using pragmatic questionnaire is used in this study, which can provide only preliminary evidence of association rather than a dream diary report for a certain period of time. A severity assessment of IBS may give better clarity for its associations. These factors constitute major limitations of our study.

CONCLUSIONS

Significant association was found between psychiatric co-morbidities like current generalised anxiety disorder, current major depression and persistent depressive disorder and dream patterns like emotionally disturbing dream content, dreaming about bowels, pain and toilets. Significant association was found between poor sleep quality and dream pattern like dreaming about pain and soiling themselves. It is not clear from our study whether any pattern of dreams or not having dreams could be studied as a prognostic indicator in IBS, which can be evaluated by an interventional follow up study.

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