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Prevalence and Factors Associated with Sexual Dysfunction among Patients with Irritable Bowel Syndrome

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ABSTRACT: Background: Irritable bowel syndrome is common gastrointestinal problem often linked to sexual and psychological disorders. Sexual dysfunction is not adequately recognized as one of the problems in IBS and there is scarcity of evidence from India using valid instruments for measuring sexual function. The current study aimed to determine the prevalence of sexual dysfunction in patients with IBS and to evaluate any associations with socio-demographic and clinical characteristics.

Methods: A cross-sectional study was conducted at JSS Hospital, Mysuru including 382 patients diagnosed with IBS based on Rome IV criteria. Patients were selected using purposive consecutive sampling method. Socio-demographic and clinical information was collected from the patients using a structured proforma and sexual dysfunction was evaluated with the Arizona Sexual Experiences Scale. The Chi-square test and independent samples t-test were used for testing the associations. Binary logistic regression determined the independent risk factors associated with sexual dysfunction.

Results: Sexual dysfunction was found in 46.3% of the participants. It was observed from the results of the regression analysis that marriage (AOR 3.64), IBS-C (AOR 8.66), and older age (AOR 1.15) are the risk factors for sexual dysfunction and the duration of the illness was a protective factor (AOR 0.67). Sex did not show a significant association with sexual dysfunction.

Conclusions: Almost half of the patients with IBS suffer from sexual dysfunction, especially married patients, older patients and patients with IBS-C.

1. INTRODUCTION

Irritable bowel syndrome (IBS) is a frequent disease among patients visiting gastroenterology clinics in India. Even though IBS is common in clinical practice, its prevalence in the community has been found to be lower than what is observed clinically, ranging from 0.4% to 4.2%. This shows that there is a wide gap between the frequency of the disease in the clinical practice and in the community due to referral bias (certain population groups like males are more prone to attend hospitals) and the use of different diagnostic tests. According to the 2023 Indian consensus statements by the Indian Neurogastroenterology and Motility Association (INMA), the lower prevalence of IBS in the Indian community as compared to other Western nations is attributed to factors like diet, socio-cultural differences, and hygiene issues and sensitivity of diagnostic criteria like Rome IV (1). Similar prevalence rates and risk factors have been found in adjacent countries, where the IBS prevalence rates are also fairly high (2).

Today, IBS is known as a disorder of gut-brain interaction. Dysfunction of the interaction between the gut and brain, which involves the role of the microbiome, immunity, and nervous system, is one of the key mechanisms of the pathogenesis of IBS (3). The dysfunction of this mechanism has also been found to cause increased frequency of anxiety and depression among people with IBS (4). Intervention of the diet, microbiota, and probiotics as a part of the treatment of the condition is now under consideration (5).

Both anxiety and depression commonly develop among IBS patients. The prevalence of both diseases has been found to be quite high in a meta-analysis of Indian patients (6). Both comorbidities have common pathways that connect them and involve the gut and brain interactions. Such disorders require joint medical and psychological intervention and create a heavy burden on the mental health of IBS patients (7). It results in poor quality of life among patients with IBS (8).

Sexual functioning is one of the important aspects of IBS burden. The frequency of sexual dysfunction is higher among people who suffer from IBS than among healthy people. The recent study of Jordanian women showed that there was a high prevalence rate of female sexual dysfunction among patients with IBS (9). It has been proved that sexual dysfunction and depression in patients with IBS lead to additional reduction in their quality of life (10). There are few studies on the subject among men.

There is little scientific literature on IBS and sexual dysfunction among Indians. Most of the literature lacks the use of standardized methods, like Arizona Sexual Experiences Scale (ASEX), in assessing sexual dysfunction among Indians. Moreover, there are few studies that evaluate the relationship between sociodemographic and clinical factors of sexual dysfunction, such as marital status, type of IBS, and disease duration. To address this gap, the present study aimed to determine the prevalence of sexual dysfunction among patients with IBS using the ASEX and to identify associated socio-demographic and clinical factors. The findings may inform routine screening practices and support the integration of gastroenterology and mental health care for patients with IBS in India.

Irritable bowel syndrome (IBS) is one of the most prevalent gastrointestinal disorders encountered in clinical practice and is considered as a disorder of gut-brain interaction (DGBI). While IBS is commonly diagnosed in gastroenterology clinics, the prevalence has been found to be lower (0.4%–4.2%) based on community studies conducted in India. The reason behind this variation could be due to health care-seeking behavior, referral bias, and diagnostic criteria used. According to the consensus statements from Indian Neurogastroenterology and Motility Association (INMA), 2023, there may be underestimation of the prevalence of IBS in the Indian population because of the use of Rome IV criteria based on dietary, cultural and symptom reporting differences [1]. The same results have been found in other South Asian countries [2].

IBS is a multifactorial disorder and is caused by the interaction of multiple factors such as altered gut motility, increased intestinal sensitivity, alteration in gut microbiome, inflammation, and disturbance in interplay between the gut and the brain [3]. Gut-brain interaction includes central nervous system, enteric nervous system, immune system, autonomic nervous system, and gut microbiome. Stress may aggravate this process and leads to maintenance of symptoms [3].

Co-morbid anxiety and depression is common in patients with IBS and are related to severity of symptoms and poor quality of life [4]. IBS shares similar biological features with co-morbid anxiety and depression in IBS like alteration in levels of serotonin, chronic activation of hypothalamic-pituitary-adrenal (HPA) axis, autonomic nervous system dysfunction, activation of the immune system, and alteration of gut microbiome [5]. Hence, medical and psychological intervention may be required for patients suffering from IBS [6].

Sexual dysfunction is an important issue in patients suffering from IBS that remains untreated in many cases. Abdominal pain, bloating, altered bowel habits, fatigue, concern about body image, and co-existent anxiety or depression may lead to sexual dysfunction [7]. Studies revealed higher risk of sexual dysfunction in individuals with IBS when compared to healthy controls and hence leads to poor intimate relationship and poor quality of life [8,9]. Pathophysiologically, the connection between IBS and sexual dysfunction is multi-faceted. The alteration of the communication between the gut and the brain leads to alterations in the brain areas responsible for the libido, arousal, and emotionality. Abdominal pain causes decreased libido because of increased pain perception and blunted reward response in the brain [10]. The changes in the levels of serotonin – the neurotransmitter affecting both gastrointestinal tract and sexuality – result in decreased libido, sexual arousal disorders, delayed orgasm, and erectile dysfunction [11]. Stress activates the HPA axis that results in increased cortisol production which decreases the activity of the hypothalamic-pituitary-gonadal (HPG) axis and affects the production of testosterone, estrogen, and progesterone. These hormones are involved in the regulation of sexual desire, arousal, erection, lubrication, and orgasm. The changes in hormonal levels may also increase pain sensitivity and result in aggravation of IBS symptoms, mostly in females [12,13]. Besides, alterations in the autonomic nervous system and inflammation with increased cytokine production, including TNF-α and IL-6, may cause impaired sexual function [14]. Alterations in the gut microbiota may also influence sexual behaviour by affecting neurotransmitters such as serotonin, dopamine, gamma-aminobutyric acid (GABA), oxytocin, and estrogen metabolism through the estrobolome [15].

Despite increasing evidence of the relationship between IBS and sexual dysfunction, sexual health is rarely studied in Indian context. Therefore, the present study was conducted to determine the prevalence of sexual dysfunction among patients with IBS and to identify the socio-demographic and clinical factors associated with sexual dysfunction.

2. MATERIALS AND METHODS

2.1 Study Material

The present hospital-based cross-sectional study has been carried out to determine the prevalence of sexual dysfunction among patients diagnosed with irritable bowel syndrome (IBS) and to explore socio-demographic and clinical factors associated with it.

2.2 Sample Collection

Calculation of sample size has been done using the G*Power (Version 3.1) software, considering a moderate effect size, 95% confidence level, and 80% statistical power. Cross-validation has been done using the standard formula for calculating prevalence, where the assumed prevalence of sexual dysfunction is 45.9%, as per a recent Indian study in men with IBS (George, 2026, Frontline Gastroenterology). The assumed precision of the study is 5% at a 95% confidence level. A total of 382 subjects meeting the minimum sample size have been included in the final analysis. Purposive consecutive sampling has been used among patients visiting the department of Gastroenterology.

Patients with IBS have been included in the study, whereas those with pre-existing psychiatric conditions and severe physical co-morbidity have been excluded.

This study was carried out in JSS Hospital, Mysuru, which is a tertiary care general hospital catering to patients belonging to four neighboring districts. Data collection was done between June 2024 and January 2026. The help of the Department of Gastroenterology was sought for the study. Eligible subjects were briefed regarding the study and written informed consent was taken prior to data collection. The process of data collection was done in a confidential place. Confidentiality of the subjects and their willingness to talk about sensitive issues was assessed before continuing with the process. Data was collected by one male and one female MD Psychiatry postgraduate student, both trained in conducting this particular study. Two interviewers were present during the process of data collection and subjects could choose whether they preferred male or female interviewer for discussing sensitive issues.

2.3 Extraction Procedure

Socio-demographic and clinical data were collected using a structured proforma. The socio-demographic data comprised age, gender, marital status, educational status, occupation, and place of residence. Clinical data comprised duration of illness and subtype of IBS.

2.4 Analytical Methods

IBS was diagnosed by a consultant gastroenterologist after a thorough clinical assessment according to the Rome IV Criteria. The subjects were then further classified into the following IBS subtypes: IBS-C (constipation-predominant), IBS-D (diarrhoea-predominant) and IBS-M (mixed). Only those patients who had IBS diagnosis were recruited for this study.

Sexual dysfunction was measured using Arizona Sexual Experiences Scale (ASEX). ASEX is a well validated self-rated questionnaire which comprises of five items related to libido, sexual excitement, penile erection or vaginal lubrication, orgasm achievement and satisfaction with orgasm on a 6 point Likert scale. The total possible scores on ASEX range between 5-30, where a high score suggests greater sexual dysfunction. Sexual dysfunction was defined as ASEX score 19 or above, score 5 or above on one item and score 4 or above on three items.

2.5 Statistical Analysis

Data were input into Microsoft Excel and analyzed through IBM SPSS Statistics version 22. Descriptive statistics (frequency, percentages, mean, and standard deviations) were used for summarizing the data. Chi-square test was used for analyzing associations among categorical variables whereas independent samples t-test was used for comparing continuous variables between patients with and without sexual dysfunction. In bivariate analysis, age and disease duration were divided into categories for group-wise comparisons; however, these two variables were kept as continuous variables for regression analysis

in order to maximize the statistical power. The variables showing significance in bivariate analysis along with sex and age (clinically important variables based on literature despite not being significant in bivariate analysis) were entered in the binary logistic regression model by using Enter method to identify the determinants of sexual dysfunction. The significance level was set at $p < 0.05$.

3. RESULTS AND DISCUSSION

3.1 Preliminary Analysis

Among the participants, the majority were male, married, and belonged to the 31–40 years age group. IBS-M was the most common IBS subtype, followed by IBS-D and IBS-C. Most participants had been living with IBS for 6 years or longer. 46.3% the participants reported sexual dysfunction.

Table 1. Socio-demographic and Clinical Characteristics of Participants

Variable	Category	n (%)
Sex	Male	235 (61.5)
	Female	147 (38.5)
Age group (years)	18–30	117 (30.6)
	31–40	205 (53.7)
	≥41	60 (15.7)
Marital status	Married	333 (87.2)
	Single	49 (12.8)
IBS subtype	IBS-C	99 (25.9)
	IBS-D	113 (29.6)
	IBS-M	170 (44.5)
Duration of illness	<5 years	95 (24.9)
	≥6 years	287 (75.1)
Sexual dysfunction status	No Sexual Dysfunction (NSD)	205 (53.7)
	Sexual Dysfunction (SD)	177 (46.3)

3.2 Instrumental Analysis

There was a significant association between sexual dysfunction and marital status ($p = 0.040$) and IBS subtype ($p < 0.001$). Married participants had significantly higher rates of sexual dysfunction than single participants ($p = 0.040$). Participants with IBS-C had significantly higher rates of sexual dysfunction than those with IBS-D or IBS-M ($p < 0.001$). No significant association was found between sexual dysfunction and sex, age group, or duration of illness at the bivariate level ($p > 0.05$ for all). Participants without sexual dysfunction had a significantly longer duration of illness than those with sexual dysfunction (9.30 ± 5.10 vs. 7.38 ± 4.06 years; $t = -4.104$, $p < 0.001$).

Table 2. Association of Selected Socio-demographic and Clinical Characteristics with Sexual Dysfunction

Variable	Category	NSD, n (%)	SD, n (%)	χ^2	df	p-value
Sex	Female (n=147)	76 (51.7)	71 (48.3)	0.371	1	0.543
	Male (n=235)	129 (54.9)	106 (45.1)			
Age group (years)	18–30 (n=117)	57 (48.7)	60 (51.3)	2.727	2	0.256
	31–40 (n=205)	118 (57.6)	87 (42.4)			
	≥41 (n=60)	30 (50.0)	30 (50.0)			
Marital status	Married (n=333)	172 (51.7)	161 (48.3)	4.232	1	0.04
	Single (n=49)	33 (67.3)	16 (32.7)			
IBS subtype	IBS-C (n=99)	22 (22.2)	77 (77.8)	53.183	2	<0.001
	IBS-D (n=113)	74 (65.5)	39 (34.5)			
	IBS-M (n=170)	109 (64.1)	61 (35.9)			
Duration of illness	<5 years (n=95)	49 (51.6)	46 (48.4)	0.221	1	0.638
	≥6 years (n=287)	156 (54.4)	131 (45.6)			

3.3 Binary Logistic Regression Analysis

According to the binary logistic regression results, participants who were married had significantly higher odds of sexual dysfunction when compared to those who were single. In terms of IBS subtypes, those who were of IBS-C type had higher odds of sexual dysfunction when compared to IBS-M type patients. However, there was no statistically significant relationship between IBS-D subtype and sexual dysfunction. Increasing age increased the odds of sexual dysfunction, but the duration of disease was negatively related to sexual dysfunction.

Model summary: The logistic regression model was statistically significant (Omnibus $\chi^2 = 136.586$, df = 9, $p < 0.001$), indicating that the predictors collectively distinguished between participants with and without sexual dysfunction. The model explained 30.1% (Cox & Snell R^2) to 40.2% (Nagelkerke R^2) of the variance in sexual dysfunction and demonstrated a good fit to the data (Hosmer–Lemeshow $\chi^2 = 4.998$, df = 8, $p = 0.758$). The overall classification accuracy of the model was 72.8%.

Table 3. Binary Logistic Regression Analysis of Factors Associated with Sexual Dysfunction among Patients with Irritable Bowel Syndrome (N = 382)

Variable	Category	B	SE	Wald χ^2	AOR	95% CI	p-value
Sex	Female	Reference	–	–	1.00	–	–
	Male	0.308	0.271	1.292	1.36	0.80–2.31	0.256
Marital status	Single	Reference	–	–	1.00	–	–
	Married	1.291	0.546	5.603	3.64	1.25–10.60	0.018
IBS Subtype	IBS-M	Reference	–	–	1.00	–	–
	IBS-C	2.159	0.35	38.003	8.66	4.36–17.21	<0.001
	IBS-D	-0.515	0.294	3.078	0.6	0.34–1.06	0.079
Age (years)		0.138	0.052	6.986	1.15	1.04–1.27	0.008
Duration of illness (years)		-0.405	0.063	41.87	0.67	0.59–0.75	<0.001

3.4 Discussion

In this study, 46.3% of IBS patients suffered from sexual dysfunction, demonstrating how common it is in such patients. It is comparable with results from a tertiary care centre in Vellore, India, where 45.9% of men suffering from IBS exhibited sexual dysfunction (11). Similar results have also been demonstrated in other countries. In a study conducted in Bangladesh, 56.7% of IBS patients were found to suffer from sexual dysfunction with the use of the same method of evaluation as our study (12). Those patients having constipation-predominant IBS (IBS-C) had significantly higher odds of sexual dysfunction compared to mixed-type IBS patients. Such comparative results have been obtained in the study by Fass et al., where patients with IBS-C suffered from sexual dysfunction more often than patients with IBS-D (15). Such results could be explained due to the close connection between the bowel and pelvic organs. Rectum, bladder and reproductive organs have common nerve pathways, and discomfort in any of these organs can affect the rest of them. Pelvic organ cross-sensitization may increase discomfort during sexual intercourse (15,16). Pelvic floor disturbances that are usually encountered in IBS-C, including straining, incomplete evacuation, and heightened pelvic floor muscles tension, can be an additional cause for pain and difficulties during intercourse (17). Also, hormonal disturbances should be considered since progesterone slows down the

peristalsis process and causes constipation, whereas sex hormones affect visceral pain and sexual function. Thus, all these factors could lead to an increase in sexual dysfunction among the patients with IBS-C.

In our study, significantly increased odds of sexual dysfunction were found in the group of Married participants compared to the Single participants. The reason for this is probably the increased probability of sexual activity of married persons and therefore of reporting of their sexual problems. The symptoms of IBS including abdominal pain, bloating, urge sensation, fear of bowel accidents can decrease the sexual self-confidence and result in avoiding the sexual activity. This type of the problem has already been reported among the patients with chronic bowel disorders (13,18). Old age was another determinant of sexual dysfunction in the study. This finding is consistent with earlier research conducted in the USA and Mexico where patients with sexual dysfunction were found to be older than patients who had no sexual dysfunction (13,14). There is natural decline in sexual function as one grows older because of changes in hormone levels, circulatory system issues, medical conditions and drug intake. Nevertheless, the Indian study in which men with IBS were surveyed for sexual dysfunction showed no correlation between age and sexual dysfunction (11).

It should be noted that the longer duration of the disease correlates with lower risk of sexual dysfunction. Even though the correlation seems to be quite surprising, patients can get used to having IBS as time passes by. It is possible that they learn to identify triggers, change their eating habits, take drugs regularly and cope with IBS in such a way that it does not affect their sexual activity anymore. The alternative hypothesis suggests that people with more severe symptoms start seeking help earlier whereas people with longer lasting IBS attending follow-ups have stable conditions. No previous study has identified any correlation between the length of time with the condition and sexual dysfunction (11,17).

Gender did not play a significant role in sexual dysfunction in the current study. Fass et al. also had similar findings, which showed that there was an equal prevalence of sexual dysfunction among males and females having IBS; however, painful intercourse was more frequent in females (15). Although the overall prevalence rate was equal, the underlying biological causes can be different in both men and women. While females are more likely to report problems concerning pain, lubrication, and sexual interest, men experience problems concerning erectile and ejaculation disorders. Sexual differences in the presentation of IBS may be due to different functions of the brain. The hormones that affect sex play a role in the regulation of bowel movements, pain tolerance, stress reactions, and sexual function through the gut-brain connection (19). Neuroimaging studies indicate that female patients with IBS demonstrate increased activity of the brain areas associated with emotions and pain perception, namely the anterior cingulate cortex and amygdala, while men have increased activity in areas responsible for sensory processes (20). It was recently revealed that there are some sexual differences in brain network organization in IBS patients (21). An interesting theory to explain such symptoms is the triple-network of the brain model, which involves the salience network, default mode network, and central executive network. According to the theory, the salience network, including the anterior insula and anterior cingulate cortex, perceives the importance of certain internal bodily stimuli and draws attention to them (22). In the case of IBS, the network works excessively and pays much attention to such sensations as bowel symptoms, abdominal and pelvic pain (23). That means that a patient becomes more attentive to them even during sexual intercourse, what makes him/her not able to be sexually aroused. Sexual hormones can affect brain networks in different ways in men and women, that is why there are different symptoms in spite of similar cases of sexual dysfunction. In conclusion, research seems to indicate that sexual dysfunction among IBS patients can be associated with a number of determinants such as the type of IBS, age, marriage status, duration of the condition, pelvic dysfunction, hormonal influence, and altered gut-brain axis function. Because sexual health is not often considered in the routine care of patients, physicians should make a point of inquiring about sexual issues among IBS patients, especially among CP-IBS patients and patients aged more than 30 years old.

Strengths, Limitations, and Future Research Directions: The current study has various strengths like the use of a valid tool (ASEX), proper calculation of the sample size, use of both males and females as interviewers and hence increasing patient comfort. In addition, it focused on IBS subtype which is a variable not much researched in Indian context. On the other hand, due to cross-sectional study, no cause-effect relationship can be determined. Further, it could not be generalized as it is a single-center and hospital-based study. Also, since it is a sensitive issue, there might have been under reporting of facts due to lack of anonymity despite proper measures being taken. There was no information about medication, psychiatric co-morbidities, and relationship dynamics in the study. In future, there should be longitudinal and multicenter studies with more male patients. It should investigate the importance of medications, psychiatric co-morbidity and partner related factors in detail.

4. CONCLUSION

In the study above, almost half of IBS patients have sexual dysfunction, with greater chances in recently diagnosed patients and those suffering from constipation predominant IBS. Longevity of illness was significantly associated with low chances of sexual dysfunction. This study indicates the importance of screening for sexual health in IBS patients, especially IBS-C. It will be necessary to integrate gastroenterology with mental healthcare in the management of this aspect of IBS, which has been overlooked until now.

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Author Contributions

Dr. Vikrant Arora: Conceptualization, Investigation, Methodology, Writing—original draft.
Dr. Shivananda Manohar J: Supervision, Data Curation, Formal Analysis, Writing—review & editing.

Conflict of Interest

Authors have no conflict of interest to disclose.

Ethics Statement

The study was approved by the Institutional Ethics Committee, JSS Medical College, Mysuru.

Data Availability Statement

Data supporting the findings of this study are available from the corresponding author upon reasonable request.

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