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ASSESSMENT OF THE CORRELATION BETWEEN NEGATIVE EMOTIONAL STATES AND THE SEVERITY OF *GRAHANI* DOSHA: AN OBSERVATIONAL STUDY

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ABSTRACT

In the contemporary era of digitalization and rapid lifestyle changes, stress and emotional instability have become unavoidable, significantly impacting gastrointestinal health. *Grahani* is a disorder characterized by the derangement of *Agni*, leading to impaired digestion and assimilation of food. While Samhitas do not exclusively list emotional disturbances as primary causes of Grahani, they emphasize the role of psychological factors in vitiation of the *Agni*. This study adopted an observational design to evaluate the association between negative emotions—such as anxiety, depression, and stress—and the severity of *Grahani* symptoms. Using the Karl Pearson correlation coefficient, the study identified a weak but statistically significant positive correlation ($p < 0.05$). These findings suggest that higher levels of negative emotional distress are associated with increased disease severity. The integration of concept of *Vata* imbalance and *Prana-Samana Vayu* interaction, alongside concept of the gut–brain axis and neuroendocrine regulation, provides a comprehensive framework for understanding this relationship. The results underscore the necessity of incorporating psychological interventions in the management of *Grahani* to achieve sustainable therapeutic outcomes.

KEYWORDS: *Grahani*, Agni, Negative Emotions, Gut–Brain Axis, Vata Dosha, Stress, Psychosomatic disorder.

INTRODUCTION

The modern world is characterized by a high-speed digital lifestyle that frequently disrupts emotional equilibrium. This persistent "emotional roller coaster" is no longer seen merely as a psychological concern; its manifestations in physical health, particularly within the gastrointestinal system, are becoming increasingly evident. Common clinical presentations such as chronic indigestion, abdominal discomfort, and altered bowel habits are often misunderstood solely to dietary errors, ignoring the major impact of the patient's emotional quotient. In Ayurveda, these symptoms are central to the pathology of *Grahani*. This disorder involves the functional impairment of the *Grahani* caused by the derangement of *Agni*. According to *Acharya Charaka*, the manifestation and progression of any disease (*Vyadhi Bala*) are directly proportional to the intensity and accumulation of *Nidana*, *Dosha*, and *Dushya*.[1]

Modern medicine states these insights through the **gut–brain axis** model. It is now scientifically recognized that psychological stress triggers neuroendocrine changes that influence gut motility, intestinal permeability, secretion, and the balance of microbial flora. Although there are many theoretical researches around the topic, there is a lack of quantitative research correlating emotional health with the clinical severity of *Grahani*. This study seeks to bridge that gap by assessing the correlation between negative emotions and severity of *Grahani*.

MATERIALS AND METHODS

AIM

To understand the relation between emotional quotient and *Grahani* severity.

Study Design

The study has been approved by Institutional Ethical Committee and is registered to CTRI (CTRI/2022/07/044156).

This research utilized a **cross sectional observational study.**

I. CRITERIA FOR SELECTION OF PATIENTS-

❖ INCLUSION CRITERIA

- Male or female between the age group of 18 -60 years
- Patients fulfilling the criteria of symptoms of *Grahani*.

❖ **EXCLUSION CRITERIA**

- Patients below 18 years and above 60 years of age.
- Patients suffering from chronic diarrhea.
- Known case of chronic debilitating diseases like Diabetes mellitus, Renal disorders, Liver disorders, HIV, tuberculosis, thyroid disease etc.

The assessment focused on two factors

1. **Severity of *Grahani*:** Severity measures using grading for *Grahani* symptoms.
2. **Negative Emotional States:** The intensity of negative emotions are assessed by taking history of patients.

Table 1: GRADING FOR *GRAHANI* SYMPTOMS.

S.NO.	SYMPTOMS	GRADING	INTERPRETATION
1.	***Muhurbadham Muhurdravam malapravruti***	**0**	Normal
		1	1-3 times
		2	4-6 times
		3	7-10 times
2.	***Udar Gaurav***	**0**	No Heaviness
		1	Occasionally feels heaviness
		2	Frequently feels heaviness
		3	Mostly feels heaviness
3.	***Aruchi***	**0**	Normal desire for food
		1	Desire for food atleast twice in a day
		2	Desire for food atleast once in a day
		3	No desire for favourite food
4.	***Ajeerna***	**0**	Able to digest heavy food
		1	Occasionally prolonged after heavy meal
		2	Consistently prolonged after heavy meal
		3	Consistently prolonged after light meal
5.	***Daurgandhitmalapravruti***	**0**	No foul smell
		1	Occasionally
		2	Frequently
		3	Mostly
6.	***Apakwamalapravruti***	**0**	Normal
		1	Occasionally sticky with foul smell
		2	Frequently sticky with foul smell
		3	Mostly sticky with foul smell
7.	***Trishna***	**0**	Rarely
		1	Occasionally
		2	Frequently
		3	Mostly

CLINICAL STUDY

SELECTION OF PATIENTS

- A total of 100 patients with classical features of *Grahani* were taken, out of which 86 completed the study. They were randomly selected for this study, regardless of their sex, religion, occupation, etc.
- A detailed Performa was prepared to evaluate the severity of symptoms of the disease and evaluate etiological factors.
- The patients who fulfilled the inclusion and exclusion criteria were registered for the study and evaluated in detail.

Statistical Analysis

To determine the relationship between emotional states and disease severity, the **Karl Pearson correlation coefficient** was used. This test provides association measurement between two variables. The value of r was determined at **p < 0.05**. Strong relation - r => 0.8, Significant correlation- r= 0.3 to 0.7, Poor correlation-r=< 0.3, No relation r= 0

OBSERVATIONS

Table 2: Psychological Status Wise Distribution.

EMOTIONAL STATUS	NO. OF PATIENT	PERCENTAGE
Normal	22	25.5%
Anxious	36	41.9%
Stress	42	48.8%
Depressed	16	18.6%
Sentimental	2	2.3%
Tense	9	10.5%

Table provides the distribution of patients based on their psychological status. The data reveals that the most common emotional states among patients are "Stress" (48.8%) and "Anxious" (41.9%), followed by "Normal" (25.5%). Additionally, "Depressed," "Tense," and "Sentimental" emotional states are reported by 18.6%, 10.5%, and 2.3% of patients, respectively.

RESULTS

Table No. 3: Assessment Of *Grahani* Severity And Negative Emotions.

Parameter	Sample size	P*	r*	Correlation
Grahani Severity and negative emotions	86	0.0212	0.248	Weak positive correlation

r*= Karl Pearson correlation coefficient P*=<0.050- significant relation, P*=>0.050-no significant relation In Table 3, involving 86 samples, a weak positive correlation (r = 0.248, p = 0.0212) is observed between *Grahani* Severity status and negative emotions, as indicated by the Karl Pearson correlation coefficient. The correlation is statistically significant (P* < 0.050), suggesting a modest relationship between *Grahani* Severity and the experience of negative emotions, more number of negative emotions were related to more severe *Grahani* symptoms.

These results indicate that as the intensity and quantity of negative emotions like stress, anxiety, or depression increases, there is a concurrent, measurable increase in severity of the *Grahani* symptoms. However, the "weak" nature of the correlation suggests that *Grahani* is a multifactorial disorder where negative emotions act as catalysts rather than sole causative agents.

DISCUSSION

The above findings align with the concept of *Acharya Charaka* in *Prameha Nidana* Chapter occurrence of diseases depends on the specificity of *Nidana*, *Dosha* and *Dushya* . According to the Samhitas, while physical *Nidana* (like improper diet) are primary, the state of the mind (*Chitta*) is inextricably linked to the state of the *Agni*. Acharya Charaka has clearly mentioned in Trividha Kukshiya Adhyaya that in presence of Chinta, Shoka, Bhaya, Krodha, Dukha, even the food consumed in right quantity and quality is not properly digested.[5] Also, Bhaya and Shoka vitiate Vata Dosha.[2] All of these causes vitiation of Agni which is Nidana for the *Grahani* Dosha. In this study we came across that as the *Nidana* increases severity of *Grahani* also increases. This suggests that the progression and intensity of *Grahani* are influenced by the specific causative factors involved. The presence of Anxiety, Stress, Depressed and sentimental state of mind causes vitiation of the *Vata Dosha*. It causes *Prana Vayu Dushti* because these states directly affect *Chitta* (Mind).

The study interprets the correlation through the following mechanism:

- **Vata Vitiation:** Negative emotions—specifically anxiety and instability—primarily vitiate the **Vata Dosha**.
- ***Prana and Samana Vayu*:** Emotional disturbances first affect *Prana Vayu*, which governs neurological and mental functions. Because *Vayu* is interconnected, *Prana Vayu Dushti* (disturbance) eventually affects *Samana Vayu*, the subtype responsible for regulating the *Agni* and the movement of the gastrointestinal tract.

- ***Agni Dushti*:** This disturbance leads to *Agni Dushti* (impaired digestion), the central pathological feature of *Grahani*. The *Chala Guna* (mobile quality) of *Vata* causes irregular motility, explaining the hallmark symptom of alternating bowel habits. Furthermore, the **Bhagavad Gita** provides a philosophical foundation for this, describing digestion as a synergistic function of *Prana* and *Apana Vayu*, illustrating an ancient understanding of the mind-body connection in metabolic processes.

Modern Scientific Integration: The Gut–Brain Axis

Modern science validates these observations through the **Hypothalamic-Pituitary-Adrenal (HPA) axis**. Chronic negative emotions and stress activate this axis, leading to an increase in **cortisol** levels. Stress affects various aspects of the digestive system, including intestinal motility, visceral sensitivity, secretions, gut permeability, and the composition of the gut microbiota.[3]

Elevated cortisol has several detrimental effects on the gastrointestinal tract

1. **Motility and Secretion:** It disrupts the regular rhythmic contractions of the gut and alters the secretion of digestive enzymes.
2. **Intestinal Permeability:** Stress can lead to "leaky gut," where the intestinal barrier is compromised, increasing visceral sensitivity and inflammation.
3. **Microbial Balance:** Stress-induced dysbiosis (imbalance in gut microbiota) further aggravates digestive distress, mirroring the chronic nature of *Grahani*.

Clinical Implications

The study emphasizes that *Grahani* should not be treated as a localized gastric issue. The significant correlation with emotions suggests that for many patients, dietary changes alone may be insufficient. A holistic approach—one that addresses both the physical *Agni* and the psychological *Manas*—is required.

CONCLUSION

This research establishes a statistically significant positive correlation between negative emotional states and the severity of *Grahani*. The integration of concepts regarding *Vata* and *Agni* with modern neuroendocrine theories of the gut–brain axis provides a robust model for understanding psychosomatic digestive disorders. To improve therapeutic outcomes, the management of *Grahani* must evolve beyond conventional medicine and dietetics to include

psychological assessment and stress management strategies. Addressing the mind is essential for restoring the balance of *Agni.*

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