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Effect of Cumin Water on Hunger and Digestion: A Pilot Study

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Abstract:

- ***Background***

Cumin (Cuminum cyminum) has traditionally been used in various systems of medicine for improving digestion, appetite, and gastrointestinal comfort. Scientific evidence regarding its effects on digestive symptoms in young adults remains limited.

- ***Aim***

To evaluate the effect of cumin water on hunger and digestion among young adult females using the Gastrointestinal Symptom Rating Scale (GSRS).

- ***Methods***

An experimental pilot study was conducted among 20 female participants aged 18–20 years. Participants were randomly assigned into experimental and control groups. The experimental group consumed 250 ml of cumin water prepared by boiling 2 teaspoons of cumin seeds in 350 ml of water, administered 30 minutes prior to breakfast, lunch, and dinner for 21 days. Gastrointestinal symptoms were assessed using the Gastrointestinal Symptom Rating Scale (GSRS) before intervention and at weekly intervals. Statistical analysis was performed using the Independent-Samples Mann–Whitney U test.

- ***Results***

A statistically significant difference in GSRS change scores was observed between the experimental and control groups (Mann–Whitney U = 13.000, Z = −2.820, exact p = 0.004), indicating improvement in gastrointestinal symptoms in the intervention group.

- ***Conclusion***

Cumin water demonstrated significant beneficial effects on gastrointestinal symptoms and digestion among young adult females. The findings suggest that cumin water may serve as a simple, low-cost dietary intervention for improving digestive comfort and appetite-related symptoms. Larger randomized controlled trials are recommended.

Keywords: *Cumin Water, Cuminum Cyminum, Digestion, Appetite, GSRS, Gastrointestinal Symptoms, Pilot Study.*

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I. INTRODUCTION

Young adults are increasingly reporting hunger disorders and digestive discomfort due to changing dietary patterns, stress, sedentary lives, and irregular eating habits. Nutritional status and quality of life can be adversely affected by functional gastrointestinal symptoms, which include bloating, abdominal discomfort, indigestion, changed bowel habits, and decreased appetite.

Digestive issues have traditionally been treated with herbal medicines. Among these, one of the most popular

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therapeutic spices in traditional medical systems, such as Ayurveda, Siddha, and traditional Persian medicine, is cumin (Cuminum cyminum). Cuminaldehyde, terpenes, flavonoids, and phenolic compounds are among the physiologically active substances found in cumin that may aid in gastrointestinal regulation and stimulation.(Srinivasan, 2018)

The medicinal potential of cumin in gastrointestinal motility, metabolic control, and digestive health has been recently studied. A randomized clinical trial conducted demonstrated that Cuminum cyminum improved bowel motility after abdominal surgery(Amin et al., 2024) Furthermore, research analyzing the phytochemical makeup of cumin has found a variety of bioactive substances linked to digestion and antioxidant qualities.(Bai et al., 2025)

Cumin is traditionally believed to stimulate digestive enzyme secretion, reduce bloating, improve appetite, and enhance gastrointestinal comfort. Through increased release of digestive enzymes, several of Indian spices, including cumin, have digestive stimulating qualities.(Platel & Srinivasan, 2004)

Despite its widespread traditional use, there remains limited clinical evidence evaluating cumin water as a simple dietary intervention among healthy young adults. Therefore, the present pilot study was conducted to evaluate the effect of cumin water on hunger and digestion among females aged 18–20 years using the Gastrointestinal Symptom Rating Scale (GSRS).

➢ *Need for the Study*

Adolescents and young adults are more likely to experience digestive disorders and irregular appetites as a result of poor eating habits, fast food intake, stress, and lifestyle modifications. Many people prefer natural and nutritional methods for managing their symptoms, despite the availability of prescription interventions.

Many civilizations have long used cumin water as a folk treatment to treat dyspepsia and increase appetite. However, there is no scientific data to back up these assertions, particularly when it comes to young adults. A pilot study on cumin water could offer initial proof of its viability and efficacy as an inexpensive, natural remedy for enhancing digestive health.

➢ *Aim of the Study*

To evaluate the effect of cumin water on hunger and digestion among females aged 18–20 years.

➢ *Objectives of the Study*

- To assess gastrointestinal symptoms before administration of cumin water.
- To evaluate gastrointestinal symptoms after administration of cumin water.
- To compare changes in GSRS scores between the experimental and control groups.
- To determine the effectiveness of cumin water on digestion and hunger.

➢ *Hypothesis*

- *Null Hypothesis (H0)*

There is no significant difference in gastrointestinal symptom scores between the experimental and control groups.

- *Alternative Hypothesis (H1)*

There is a significant difference in gastrointestinal symptom scores between the experimental and control groups following cumin water intervention.

II. REVIEW OF LITERATURE

Cuminum cyminum is widely used as a medicinal herb and as a culinary spice. Its phytochemical makeup and medicinal qualities have been investigated in a number of studies.

Chemical analysis of cumin has shown that it contains several bioactive compounds such as flavonoids, terpenoids, volatile oils, and organic acids, which are believed to contribute to its antioxidant and digestive properties(Bai et al., 2025)

Research has also suggested that cumin may positively influence gastrointestinal function. In a randomized clinical trial conducted among postoperative patients, cumin administration was associated with improved bowel motility and a faster return of bowel function when compared with the control group(Amin et al., 2024)

Apart from digestive benefits, cumin supplementation has also been linked with improvements in metabolic health. A pilot study reported beneficial changes in body composition and certain metabolic parameters following cumin supplementation, indicating that cumin may possess broader physiological effects beyond digestion alone(Suzuki et al., 2025)

Traditional medicine and community-based practices have long recommended cumin water for indigestion, bloating, and appetite stimulation. Experimental animal studies have demonstrated that spice mixtures containing cumin can stimulate digestive enzyme activity and improve digestive efficiency(*Digestive Stimulant Action of Three Indian Spice Mixes in Experimental Rats - PubMed*, n.d.)

Similar findings were reported that cumin may support digestion by enhancing pancreatic enzyme activity(Platel & Srinivasan, 2004)

The antioxidant potential of cumin has also been explored in previous studies. Essential oils and phenolic compounds extracted from cumin were found to exhibit significant antioxidant activity, which may help protect the gastrointestinal tract from oxidative stress and related disturbances(Bettaieb et al., 2010)

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In addition, experimental studies investigating the biological effects of cumin have demonstrated promising chemoprotective and therapeutic properties, further supporting its potential role in promoting overall health and digestive well-being(Gagandeep et al., 2003)

Further literature has emphasized the nutritional and medicinal importance of cumin and related herbal preparations in digestive health. A comprehensive review discussing cumin and black cumin highlighted their traditional uses, chemical constituents, antioxidant activity, and nutraceutical potential in gastrointestinal health and metabolism (Srinivasan, 2018). Studies investigating spice-derived proteins and phytochemicals have also demonstrated antioxidant activity and possible gastrointestinal protective effects during digestion (Trigui et al., 2019). In addition, herbal preparations containing medicinal seeds and spices have shown therapeutic benefits in gastrointestinal disorders and microbial infections, further supporting the medicinal potential of traditional dietary interventions (Yousefnejad et al., 2023).Herbal spices rich in phytochemicals and antioxidants may contribute to digestive health and overall physiological well-being.(Sharangi & Guha, 2013)

Reviews focusing specifically on Cuminum cyminum have also highlighted its antimicrobial, digestive, antioxidant, and therapeutic properties, supporting its traditional medicinal use(Johri, 2011).

Although several studies support the medicinal properties of cumin, limited evidence exists specifically evaluating cumin water among young adult females. Therefore, the present study was undertaken to evaluate the effect of cumin water on hunger and digestion among females aged 18–20 years.

III. MATERIALS AND METHODS

➢ *Research Design*

An experimental pilot study design was used.

➢ *Study Setting*

The study was conducted among female participants aged 18–20 years.

➢ *Study Population*

Female students aged 18–20 years.

➢ *Sample Size*

A total of 20 participants were included in the study.

➢ *Sampling Technique*

Participants were randomly assigned into experimental and control groups.

- *Inclusion Criteria*

✓ Females aged between 18 and 20 years.
✓ Participants willing to participate in the study.
✓ Participants able to consume cumin water regularly for 21 days.

- *Exclusion Criteria*

✓ Participants with diagnosed gastrointestinal diseases.
✓ Individuals currently taking medications affecting digestion or appetite.
✓ Participants allergic to cumin.
✓ Participants unwilling to continue the intervention for 21 days.

➢ *Intervention*

The experimental group received 250 mL of cumin water prepared by boiling 2 teaspoons of cumin seeds in 350 mL of water. The preparation was administered 30 minutes prior to breakfast, lunch, and dinner for 21 days.

The control group did not receive cumin water intervention.

➢ *Data Collection Tool*

Gastrointestinal symptoms were assessed using the Gastrointestinal Symptom Rating Scale (GSRS). The GSRS is used to evaluate symptoms related to indigestion, abdominal pain, reflux, diarrhea, and constipation.

➢ *Procedure*

Baseline GSRS scores were recorded for all participants before initiation of the study. Participants in the experimental group consumed 250 mL of cumin water 30 minutes before breakfast, lunch, and dinner for a period of 21 day. GSRS scores were recorded at baseline and at the end of each week.

Participants were instructed to maintain their regular dietary habits and avoid introducing additional herbal or digestive supplements during the study period.

➢ *Statistical Analysis*

Data analysis was performed using SPSS software.

The Independent-Samples Mann–Whitney U test was used to compare GSRS change scores between groups because the sample size was small and nonparametric analysis was considered appropriate.

A p-value less than 0.05 was considered statistically significant.

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IV. RESULTS

➢ *Statistical Findings*

The Independent-Samples Mann–Whitney U test was used to compare GSRS change scores between the experimental and control groups.

Table 1 Independent-Samples Mann-Whitney U Test Summary

Independent-Samples Mann-Whitney U Test Summary	
Total N	20
Mann-Whitney U	13.000
Wilcoxon W	68.000
Test Statistic	13.000
Standard Error	13.119
Standardized Test Statistic	-2.820
Asymptotic Sig.(2-sided test)	.005
Exact Sig.(2-sided test)	.004

Table 2 Hypothesis Test Summary

Hypothesis Test Summary			
	Null Hypothesis	Test	Sig.[a,b]
1	The distribution of gsrs_change is the same across categories of group.	Independent-Samples Mann-Whitney U Test	.004[c]
Decision			
Reject the null hypothesis.			

The exact significance value obtained was p = 0.004, which is less than the significance level of 0.05. Therefore, the null hypothesis was rejected.

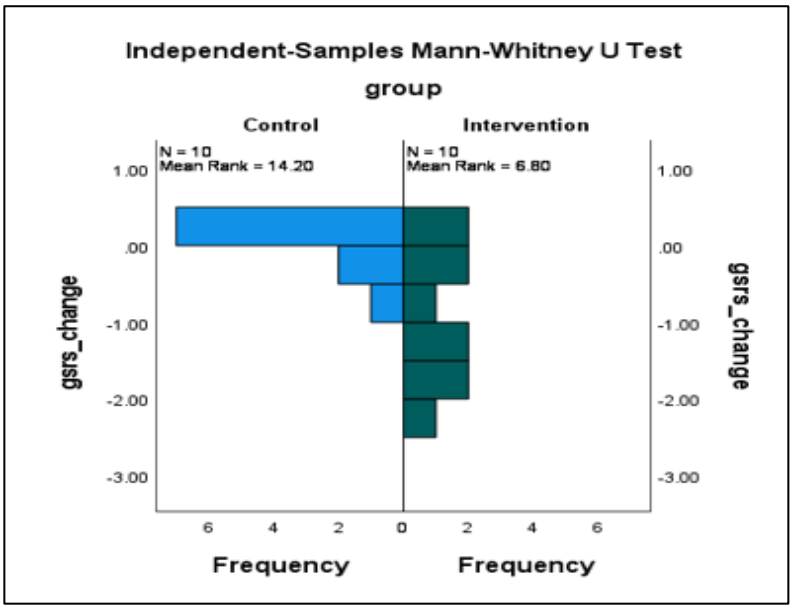

Fig 1 Independent Samples

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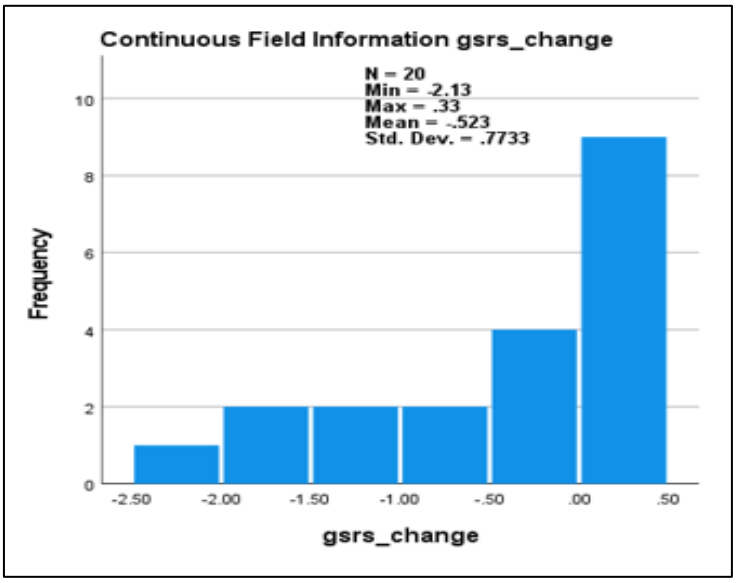

Fig 2 Continuous Field

The findings indicate that there was a statistically significant difference in GSRS change scores between the experimental and control groups following cumin water intervention. This suggests that cumin water had a beneficial effect on gastrointestinal symptoms and digestion among the participants.

V. DISCUSSION

The present pilot study evaluated the effect of cumin water on hunger and digestion among females aged 18–20 years. The results demonstrated a statistically significant improvement in gastrointestinal symptom scores among participants who consumed cumin water. The Mann–Whitney U test revealed a significant difference between the groups, suggesting that cumin water may positively influence digestive health and appetite-related symptoms.

Previous studies have also reported beneficial effects of cumin on gastrointestinal function. Clinical evidence has shown improved bowel motility and faster return of bowel function following cumin administration in postoperative patients. Studies investigating the phytochemical composition of cumin have further demonstrated the presence of compounds associated with antioxidant and digestive activity. Experimental research has additionally shown that cumin may stimulate pancreatic digestive enzyme secretion and improve digestive efficiency(Amin et al., 2024; Bai et al., 2025; Platel & Srinivasan, 2004)

The findings of the present study are also supported by literature describing the antioxidant and therapeutic properties of cumin and related herbal preparations. Antioxidant compounds present in cumin may help reduce oxidative stress within the gastrointestinal tract, thereby contributing to improved digestive comfort and gastrointestinal protection. Traditional medicinal literature has also highlighted the nutraceutical and therapeutic significance of cumin in digestive health and metabolism(Bettaieb et al., 2010)

The present study also supports the growing interest in natural and dietary interventions for improving digestive health among young adults. Modern lifestyle habits, irregular meal timings, fast-food consumption, and psychological stress may contribute to digestive disturbances in this population. As cumin water is inexpensive, easy to prepare, and culturally accepted, it may serve as a practical and accessible intervention for improving digestive comfort and appetite-related symptoms.

VI. LIMITATIONS

The present study had several limitations that should be considered while interpreting the findings. The sample size was relatively small, with only 20 participants included in the study, which may limit the generalizability of the results. The intervention period was restricted to 21 days, and therefore the long-term effects of cumin water on digestion and appetite could not be evaluated. In addition, the study included only female participants aged 18–20 years, making it difficult to apply the findings to other age groups or male populations. Dietary intake, lifestyle habits, stress levels, and physical activity were also not strictly controlled, which may have influenced gastrointestinal symptoms and appetite. Furthermore, hunger assessment was primarily based on symptom-related evaluation rather than detailed nutritional or biochemical measurements.

VII. FUTURE DIRECTIONS

Future studies should include larger sample sizes and longer intervention durations to better establish the effectiveness of cumin water on digestive health and appetite regulation. Randomized controlled trials involving participants from different age groups and both genders may provide stronger and more generalizable evidence. Future research may also incorporate additional outcome measures such as appetite scales, dietary intake analysis, biochemical markers, gut microbiome assessment, and quality-of-life parameters. Comparative studies evaluating cumin water

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alongside other natural digestive interventions may further help in understanding its clinical significance and therapeutic potential.

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➢ *Funding Statement*

The study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sector.

➢ *Conflict of Interest*

The authors declare that there is no conflict of interest related to this study.

➢ *Ethical Considerations*

Informed consent was obtained from all participants prior to data collection. Participant confidentiality and privacy were maintained throughout the study. The study was conducted in accordance with ethical research principles.

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