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A Study on *Murraya koenigii* (Curry Leaves) Impact on Gastritis

D. Kiruthika[1]*, G. Nandhini[2] and Esther Rakel[3]

[1]PG Scholar, Ganga Institute of Health Sciences Affiliated to the Tamil Nadu Dr MGR Medical University, Chennai – 600032, Tamil Nadu, India; kiruthikadevasenan@gmail.com
[2]Professor, Ganga Institute of Health Sciences Affiliated to the Tamil Nadu Dr MGR Medical University, Chennai – 600032, Tamil Nadu, India; nandhinigovindan123@gmail.com
[3]Principal, Ganga Institute of Health Sciences Affiliated to the Tamil Nadu Dr MGR Medical University, Chennai – 600032, Tamil Nadu, India

Abstract

Objectives: To assess the effectiveness of *Murraya koenigii* powder on signs and symptoms among individuals with gastritis. **Methodology:** Quantitative approach, quasi-experimental research design was adopted to assess the effectiveness of *Murraya koenigii* on gastritis patients (60 samples) in Erode, who fulfilled the inclusion criteria. Non-probability purposive sampling technique was used in this study to draw the participants. Intervention was administered for 30 days (5 g of *Murraya koenigii* leaves powder boiled in 75 ml of water) modified GAGS with infographic assisted 4-point Likert scale was used to assess the level of signs and symptoms of gastritis. Results: The study findings stated that the post-test mean effectiveness score of gastritis patients was 26.47 with standard deviation of 2.30. The calculated unpaired t-test value (51.78) showed high statistical significance at $p<0.0001$ level which revealed the effectiveness of *Murraya koenigii* leaves powder on signs and symptoms among gastritis patients. Conclusion: The results revealed that the supplementation lowers the signs and symptoms of gastritis among the selected participants.

Keywords: Effectiveness, Gastritis, *Murraya koenigii* (Curry Leaves) Powder

1. Introduction

The term Gastritis derived from the Greek word Gaster and Gastros defines the membrane of the stomach lining which gets irritated or inflamed. Long-lasting inflammation in the stomach lining leads to stomach (gastric) ulcers. Gastritis is caused by bacteria (Helicobacter pylori) and other than this, organism such as mycobacterium Avium intracellular, Herpes simplex and cytomegalovirus or the continuous intake of anti-inflammatory pain killer (Non-steroidal anti-inflammatory drug) are also caused by acid reflux. Also, it may be caused to a large extent by modifiable behavioural dietary pattern and life style pattern such as harmful use of alcohol, unhealthy diet, extreme stress, severe illness, smoking, auto immune problems and radiation therapy.

Acute gastritis and chronic gastritis are the two types. People are mostly asymptomatic or have minimal dyspeptic symptoms like upper abdominal pain or burning sensation and bloating. Sudden onset of epigastric pain, nausea and vomiting are symptoms for acute gastritis. Acute gastritis results in abdominal pain and stomach swelling but usually does not last for more than two days. If it is not treated early it leads to chronic gastritis.

Murraya koenigii (curry leaves) are a leafy species used in cooking has bioactive functional compounds and phytochemical (carbazole alkaloids). It is responsible for gastro protection effect and has capacity to inhibiting the inflammatory response. *Murraya koenigii* can be eaten on an empty stomach to help improve digestion due to its carminative property as it provides relief from flatulence and also helps lower the level of triglycerides. *Murraya*

**Author for correspondence*

koenigii might also help to manage the level of blood glucose due to its anti-diabetic and anti-inflammatory activities. It contains carbazole alkaloids, reported to possess antioxidant properties.

1.1 Statement of the Problem

A quasi experimental study to assess the impact of *Murraya koenigii* on signs and symptoms among individuals with gastritis was conducted at selected hospital in Erode.

1.2 Objectives of the Study

- To elicit the phytochemical properties (antioxidant and anti-inflammatory) in *Murraya koenigii* leaves powder.
- To assess the frequency and percentage distribution of pre and post-test level of signs and symptoms of gastritis among the selected participants.
- To evaluate the effectiveness of *Murraya koenigii* leaves powder on signs and symptoms among individuals with gastritis.
- To associate the selected demographic variables with the mean differed level on signs and symptoms.

1.3 Hypothesis

1.3.1 Alternative Hypotheses

AH_1 - There is a significant effectiveness in the pre and post-test level on signs and symptoms of gastritis.

AH2 - There is a significant association of selected demographic variable with mean differed signs and symptoms of gastritis

2. Materials and Methods

A quasi experimental research design was adopted in order to assess the effectiveness of *Murraya koenigii* powder on signs and symptoms of gastritis among gastritis patients. The independent variable of this study was *Murraya koenigii* (curry leaves) powder. The dependent variables were individuals with signs and symptoms of gastritis. The study was conducted at Dr. Sharfunnisa Hospital Erode. The study sample included gastritis patients at the selected hospital. The sample size consisted of 60 gastritis patients (who fulfilled the inclusion and exclusion criteria) selected by non-probability purposive sampling technique. The study included the gastritis patients who are willing to participate in the study.

The tool consisted of two parts i.e., data collection tool and intervention tool. The data collection tool used in this study was self-structured and modified GAGS with infographic assisted 4 point Likert scale administered pre-test assessment tool. The intervention tool - *Murraya koenigii* powder was prepared by the investigator through shadow dry method for 3 days, after that it was given for phytochemical and microbial analysis. 5 grams of *Murraya koenigii* powder was boiled in 75 ml of water for 5 minutes and strained the extract using strainer and

Table 1. Scoring key

	Scoring
Never	01
Rare	02
Frequent	03
Always	04

Table 2. Scoring interpretations

Score	**Signs and Symptoms**
1-18	Mild
19-30	Moderate
31-38	Severe
>38	Very severe

gave that juice to the patient with signs and symptoms of gastritis in the early morning for 30 days. Reinforcement with guide (visual aid booklet) included definition, causes, symptoms, foods to be included, foods to be avoided and benefits of *Murraya koenigii* method of preparation of juice. After the intervention, the investigator did the post-test assessment on level of signs and symptoms of gastritis among gastritis patients.

Modified GASG tools are used for scoring interpretation.

The study findings revealed that the intervention was administered for 30 days (5 g of *Murraya koenigii* leaves powder boiled in 75 ml of water for 5 minutes and let it cool for 2 minutes) and states that there was a significant difference in pre and post-test level signs and symptoms among participants.

2.1 Ethical Consideration

Formal administrative approval was obtained from the Ganga Institute of Health Sciences ethical committee and approval from the doctor of selected hospital, Erode. The researcher has followed fundamental ethical principles like the right to freedom from harm and discomfort, respect to human dignity .The researcher gave freedom to all the participants to decide voluntarily whether to participate in the study or to withdraw from the study and rights to ask questions at any time during the course of study. The investigator has maintained the study participant's privacy throughout the study.

2.2 Statistical Analysis

Demographic variables were described by using descriptive statistics. One way ANOVA/unpaired t-test was used to analyze the pre and post-test of signs and symptoms of gastritis.

3. Result

Most of them 43 (71.1%) were from urban area and 21 (35%) were female, 21(35%) in the age group of 25-34, 33 (55%) belonged to joint family and 60 (100%) followed non vegetarian diet pattern, 22 (36.7%) were taking non vegetarian foods weekly twice. 33 (55%) were qualified above degree, 18 (30%) of them were home maker with 20 (33.3%) of family income Rs.10,002-49,972 and 55 (91.7%) are not taking medicine for other disease condition.

Table 4.4 shows the effectiveness of pre and post-test level of gastritis in selected sample. After supplementation with paired t-test and infers that there is a high level of significant difference and the calculated t value 51.78 was statistical at $p<0.0001$ level which revealed the

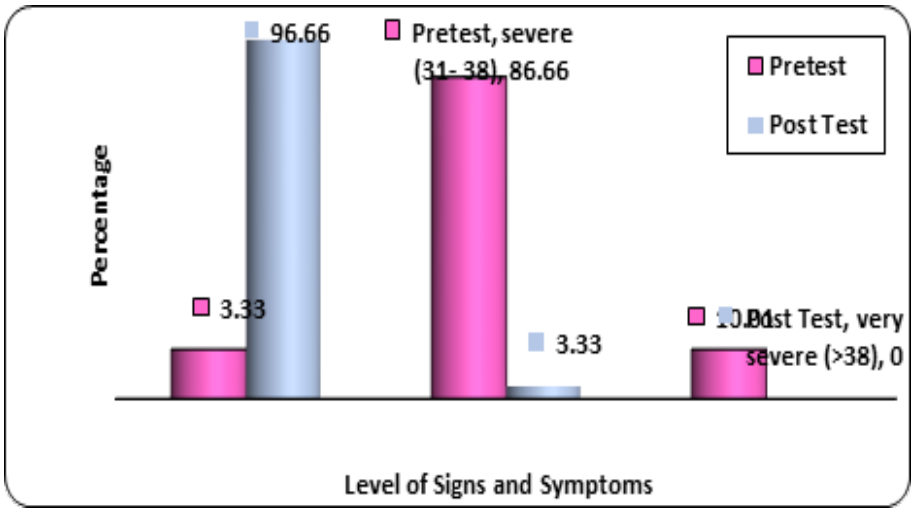

Figure 1. Percentage distribution of pre and post-test level of signs and symptoms of gastritis among gastritis patients.

Table 3. Frequency and percentage distribution of food frequency among gastritis

N = 60.

Food Frequency	More than once a day (1)		Once a day (2)		2 – 4 times per week (3)		Once in a week (4)		1 – 3 times per month (5)		Never or less than once per month (6)	
	F	%	F	%	F	%	F	%	F	%	F	%
Wheat	4	6.67	17	28.33	**26**	**43.33**	12	20.0	1	1.67	0	0
Legumes	**17**	**28.33**	11	18.33	**17**	**28.33**	10	16.67	4	6.67	1	1.67
Dairy products (Cheese, Paneer)	2	3.33	6	10.0	11	18.33	16	26.67	**24**	**40.0**	1	1.67
Meat	0	0	0	0	4	6.67	**38**	**63.33**	15	25.0	3	5.0
Sea foods	0	0	0	0	1	1.67	**38**	**63.33**	16	26.67	5	8.33
Poultry	6	10.0	**10**	**50.0**	19	31.67	3	5.0	0	0	2	3.33
Spicy foods (Fast foods)	3	5.0	10	16.67	**22**	**36.67**	15	25.0	10	16.67	0	0
Nuts and seeds	0	0	11	18.33	2	3.33	8	13.33	**22**	**36.67**	17	28.33
Caffeine	**38**	**63.33**	21	35.0	0	0	0	0	0	0	1	1.67
Chocolates	2	3.33	3	5.0	12	20.0	8	13.33	**19**	**31.67**	16	26.67
Other beverages	2	3.33	2	3.33	4	6.67	4	6.67	8	13.33	**40**	**66.67**

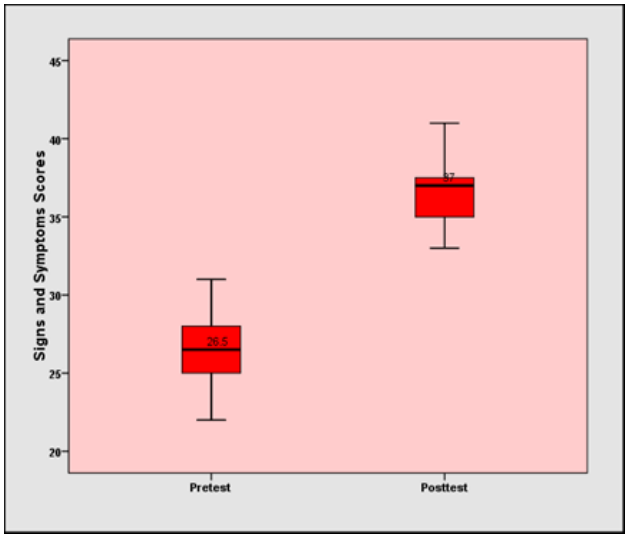

Figure 2. Effectiveness of curry leaves powder on signs and symptoms of gastritis among gastritis patients.

effectiveness of *Murraya koenigii* powder on reducing the effect of gastritis among participants. This table depicted that the participants who received the supplementation had significant changes in the signs and symptoms of gastritis. Thus, the *Murraya koenigii* leaves powder was effective in lowering the symptoms of gastritis among participants. The data findings from the Figures 1 to 3 depicts about the association of mean difference level of signs and symptoms of gastritis among gastritis patients with selected demographic variables.

The above figure depicts the association of selected demographic variables with the mean differed on level of signs and symptoms of gastritis among the selected samples. Also infers that there is one more mean gain score, the level of signs and symptoms of gastritis with those who consume non vegetarian food for more than twice a week among gastritis patients.

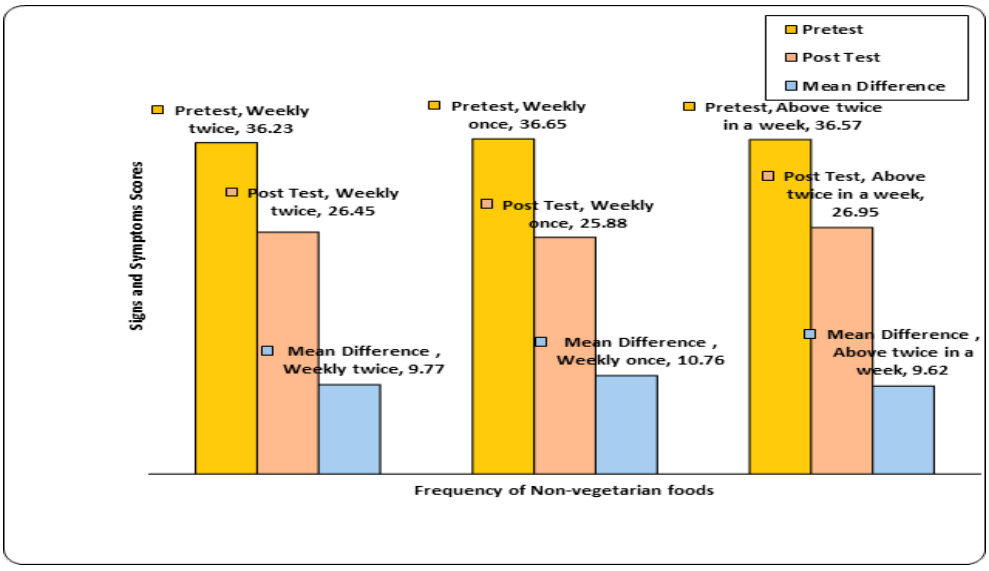

Figure 3. Association of frequency of non-vegetarian foods with mean difference score of signs and symptoms among gastritis patients.

4. Discussion

The study findings show that an intervention administered for 30 days (5 g of *Murraya koenigii* leaves powder boiled in 75 ml of water) states that there was a significant difference in signs and symptoms of gastritis.

Post-test analysis on the level of signs and symptoms of gastritis in selected samples revealed that the mean difference was 26.47 with unpaired t-test value 51.78 showed highly statistical with a significance level of $p<0.0001$.

5. Limitations

The investigator had found little complexity for in obtaining setting permission.

The study was conducted for only 30 days.

6. Conclusion

The study was aimed to prove that there is a decreasing effect on gastritis by using low cost supplement. The study finding proved that the phytochemical (carbazole alkaloid) present in *Murraya koenigii* has reducing effect on gastritis and it states that the phytochemical present in *Murraya koenigii* reduces the signs and symptoms of gastritis. The finding states that the phytochemical present in *Murraya koenigii* has a significant effect in reducing signs and symptoms of gastritis.

7. Source of Support

None.

8. Conflict of Interest

None declared.

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10. Contributors

KD: Conceptualization of the study, collection, analysis of the data, writing the manuscript, finalising the manuscript

and acting as the guarantor of the paper; NG, ER: edited and critically evaluated the manuscript.

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