



Article

**The Effect of Acupuncture Therapy with Turmeric Herbal Combination on Stomach Pain in Students of The Ministry of Health Poltekkes in Surakarta**

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**ABSTRACT**

Gastric pain is one of the signs of gastritis in the form of digestive disorders due to an inflammatory process of the gastric mucosa and submucosa which is acute, chronic diffuse, or local. The purpose of this study was to determine the effect of acupuncture therapy with a combination of turmeric herbs on gastric pain in students of the Ministry of Health Polytechnic of Surakarta. This study used a Quasy Experimental Design with a pretest and posttest design. This study was conducted in February-March 2024 at the Ministry of Health Polytechnic of Surakarta. The sample was students of the Ministry of Health Polytechnic of Surakarta who experienced gastric pain and met the inclusion and exclusion criteria. The sample was divided into two groups, each consisting of 15 children. Acupuncture therapy using CV 12, PC 6, ST 40, and SP 3 points. Combination using turmeric herbs. Data were analyzed using the Wilcoxon test. The test results showed a significance value of  $<0.001$  ( $p < 0.05$ ). This study concludes that acupuncture therapy with a combination of turmeric herbs has an effect on gastric pain in students of the Ministry of Health Polytechnic of Surakarta.

**I. INTRODUCTION**

Gastric pain is one of the signs of gastritis in the form of digestive disorders due to an inflammatory process of the mucosa and submucosa of the stomach which is acute, chronic, diffuse, or local. Gastritis is generally experienced by adolescents with a fairly high recurrence rate. The recurrence rate of gastritis in adolescents tends to increase due to the lack of optimal self-management<sup>(1)</sup>.

Productive age ranges from 15 to 64 years. Students are of productive age and have quite busy activities and lecture schedules so they can increase the risk of gastritis which is influenced by intake and diet, such as vitamin D intake and less eating frequency<sup>(2)</sup>.

Gastritis cases are included in one of the health problems in society with high prevalence. The incidence of gastritis in the world reaches 1.8 to 2.1 million people each year. This case has a fairly high recurrence rate due to dietary factors and

stress levels<sup>(3)</sup>. The percentage of gastritis cases in the world, including England 22.0%, China 31.0%, Japan 14.5%, Canada 35.0%, and France 29.5%.

Gastritis in Southeast Asia has around 583,635 incidents in the population each year. The prevalence of gastritis confirmed by endoscopy in the population in Shanghai is around 17.2% substantially higher than the population in Western countries around 4.1% and is asymptomatic. Gastritis patients are in sixth place with the number of cases of 33,580 cases of hospitalized patients with a percentage of 60.86%<sup>(4)</sup>.

The incidence of gastritis in Central Java is quite high at 79.6%<sup>(5)</sup>. Management of stomach pain can be done through pharmacology and non-pharmacology. Pharmacology management is commonly done by administering antacid drugs which can be obtained and consumed without a doctor's prescription. Most people with stomach pain consume antacid drugs that are available in the form of chewable tablets and suspensions and are classified as over-the-counter drugs registered with the National Essential Medicines (DOEN)<sup>(6)</sup>. Non-pharmacological management can be done with acupuncture therapy and the consumption of turmeric herbs.

Acupuncture in cases of stomach pain can improve blood circulation, regulate cytokines, control gastric acid secretion, and increase inflammatory response, cell regulation, proliferation, and apoptosis which strengthen the gastric mucosal barrier and provide a calming effect, thereby reducing the feeling of fullness and pain felt<sup>(7)</sup>. In the classical acupuncture method, punctures are performed on the stomach meridian and the bladder meridian. The specific points used in classical acupuncture are the front-mu point, the he-sea point, and the back-shu point<sup>(8)</sup>.

Turmeric (*Curcuma Longa Linn*) is a type of tropical plant from the *Zingiberaceae* family, which has a main content in the form of curcumin. Curcumin has many pharmacological effects and has been

shown to show high antibacterial, anti-carcinogenic, anti-inflammatory, and anti-oxidant properties and has immunosuppressive activity. The anti-inflammatory mechanism of curcumin has been shown not only to inhibit prostaglandins but is also associated with the inhibition of proinflammatory cytokines, COX-2, Inos, NF-Kb, AP-1, and MMP<sup>(9)</sup>.

Based on the background above and the results of the preliminary study, the researcher is interested in conducting a combination of acupuncture therapy at CV12 Zhongwan, ST40 Fenglong, SP3 Taibai, and PC6 Neiguan points and giving herbs with the research title "The Effect of Acupuncture Therapy with a Combination of Turmeric Herbs on Complaints of Gastric Pain in Students of the Ministry of Health Polytechnic of Surakarta".

## II. METHODS

This study uses the Quasy Experimental Design method with the research design used in this study, namely, two groups of pre-test-post-test. Pre-test to determine the initial conditions before the treatment is carried out and post-test to determine the final conditions after the treatment is carried out<sup>(10)</sup>. The researcher conducted a preliminary study using Google form media in the form of a questionnaire distributed in the Acupuncture, Speech Therapy, and Nursing departments. The results of the preliminary study obtained 46 students experiencing stomach pain. This study aims to determine the effect of acupuncture therapy with a combination of turmeric herbs on gastric pain in students of the Ministry of Health Polytechnic of Surakarta. The research subjects were divided into two groups, namely, Group I was given acupuncture therapy treatment, and group II was given acupuncture and herbal therapy treatment.

## III. RESULT

This study began with a preliminary study conducted in October 2023 to determine

the number of research subjects experiencing gastric pain. The results of the preliminary study obtained 46 research subjects who met the research criteria. The research subjects were divided into two groups, namely the combination acupuncture group of 15 subjects and the acupuncture group of 15 subjects. Both groups received therapy 8 times.

**Table 1. Characteristics of Respondents**

Syndrome	N	%
<b>Age (years)</b>		
18	6	20.0
19	9	30.0
20	5	16.6
21	8	26.6
22	1	3.33
23	1	3.33
<b>Gender</b>		
Woman	28	93.3
Man	2	6.66
<b>Differentiation syndrome</b>		
Invasion of Cold Wind of Stomach	3	10.0
Gastric Heat Retention	5	16.6
Stagnation of Qi and Xue	8	26.6
Gastric Deficiency	6	20.0
Gastric Yin Deficiency	2	6.66
Hot-Humid	4	13.3
Deficiency of the Gastric Spleen	2	6.66

Table 1. shows that most age of the respondents who feel stomach pain are ages 19 as many as 9 (30.0%), for gender most respondents are women who have 28 (93.3%) respondents. The most differentiation syndrome is stagnation of qi and xue, with as many as 8 (26.6) respondents.

**Table 2. Frequency Distribution of Research Subjects Based on NRS before Therapy Action**

Scale	Group I		Group II	
	N	%	N	%
4	5	33.3	4	26.7
5	6	40.0	7	46.7
6	4	26.7	4	26.7

Based on Table 2 it can be explained that from each treatment group of 15 people who were divided into 2 groups, namely, Group I showed that the numerical rating scale before the most action was a score of 5 as many as 6 (40.0%) people. Group II showed that the numerical rating scale before the most action was a score of 5 for as many as 7 (46.6%) people.

**Table 3. Frequency Distribution of Research Subjects Based on NRS After Therapy Action**

Scale	Group I		Group II	
	N	%	N	%
0	4	26.7	0	0.0
1	2	13.3	1	6.70
2	5	33.3	6	40.0
3	3	20.0	6	40.0
4	1	6.70	2	13.3

Based on Table 3 it can be explained that from each treatment group of 15 people who were divided into 2 groups, namely, the group I showed that the numerical rating scale after the most action was a score of 2 as many as 5 people (33.3%). Group II showed the numerical rating scale after the most action was a score of 2 and 3 as many as 6 people (40.0%). Table 3 also explains the mean (average) value of the numerical rating scale after treatment as many as 5.

**Table 4. Normality Test**

Research Data	N	p
<i>Pre-test of the acupuncture and herbal group</i>	15	0.006
<i>Post-test of the acupuncture and herbal group</i>	15	0.101
<i>Pre-test of the acupuncture</i>	15	0.007
<i>Post-test of the acupuncture</i>	15	0.052

Table 4 explains that the results of the normality test show a significance value in both post-test groups,  $p > 0.050$ ,

and a significance value in both pre-test groups,  $p < 0.050$  so that the research data is not normally distributed.

**Table 5. Characteristics of Respondents**

Research Data	N	p
Post-test of the acupuncture and herbal group	15	0.077
Post-test of the acupuncture	15	

Table 5 explains that the homogeneity result is 0.077. The results show that the Levene Statistics  $p > 0.050$  so that the variation of the research data is homogeneous.

**Table 6. Wilcoxon Test**

Group	Mean Difference	p
Group I Group II	15.50	<0.001

Table 6, shows a p-value  $< 0.050$ , the results of the study show that  $H_a$  is accepted and  $H_o$  is rejected, which means that acupuncture therapy with a combination of turmeric herbs affects reducing the scale of gastric pain in students of the Ministry of Health Polytechnic of Surakarta.

#### IV. DISCUSSION

The results of the data analysis based on gender were mostly women, which were 28 subjects. The results of this study are in line with the results of previous studies where women are more at risk of developing stomach pain. This is because men and women differ in eating patterns, activity levels, and body composition, so women tend to eat less to maintain their appearance. Women often go on strict diets, eat irregularly, or experience excessive stress<sup>(11)</sup>. The results of the data analysis based on age are mostly at the age of 19 years. Gastric pain often occurs in productive

ages, which is caused by dense activities, a lifestyle that does not pay attention to health, and stress is easy to occur<sup>(12)</sup>.

The results of data analysis based on the most syndromes obtained liver qi stagnation, this is caused by poor diet and poor emotional control. This is in accordance with the manifestation of liver qi stagnation syndrome, namely, frequent belching, epigastric distension, a feeling of fullness in the chest, a pink tongue, a thin white membrane, and a thin pulse<sup>(13)</sup>.

The results of data analysis using the Wilcoxon test obtained a significance value of The test results showed that  $H_a$  was accepted and  $H_o$  was rejected because the  $p > 0.050$ . These results indicate that the combination of acupuncture therapy with turmeric herbs has an effect on reducing the scale of gastric pain in students of the Ministry of Health Polytechnic of Surakarta.

#### V. CONCLUSION

Subject characteristics based on gender with the highest frequency in women as many as 28 subjects. Based on this, the highest age is 19 years for as many as 9 subjects. Based on the differentiation of acupuncture syndrome, with the highest frequency of liver qi stagnation as many as 8 subjects.

Based on the pain scale data before therapy the highest frequency is on a scale of 5 as many as 13 subjects. On the pain scale data after therapy with the highest frequency is on a scale of 2 as many as 11 subjects. The Wilcoxon test shows the p-value, which is  $< 0.001$ . These results indicate that  $H_a$  is accepted and  $H_o$  is rejected, and there are significant results for both intervention groups because the p-value  $< 0.05$ . The gradation value of the decrease in the pain scale in group I (Acupuncture and herbs) is 60%, while in group II (Acupuncture) it is 40%.

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