ORIGINAL RESEARCH

Traditional Chinese Nursing Using Fennel With Coarse Salt for Ironing and Umbilical Moxibustion for Epigastric Pain With Spleen-stomach Vacuity Cold

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ABSTRACT

Context • Spleen-stomach vacuity cold is the primary TCM pattern for epigastric pain, accounting for 75% of the patients. According to the TCM theory of treating both the tip and the root, epigastric pain requires the caregiver to dissipate cold and relieve pain, the treatments for the tip, which warm and supplement the spleen and stomach, the treatments for the root.

Objective • This study aimed to explore effectiveness of traditional Chinese nursing care using fennel mixed with coarse salt for ironing, with umbilical moxibustion, for epigastric pain, with a pattern of spleen-stomach vacuity cold.

Design • The research team designed a randomized control trial (RCT).

Setting • The study was conducted at Ruikang Affiliated Hospital of Guangxi University of Chinese Medicine in the capital city of the Guangxi Zhuang autonomous region in the People's Republic of China.

Participants • Participants were 96 patients who had been admitted to the hospital between October and November 2020 with epigastric pain resulting from the TCM spleen-stomach vacuity cold pattern, equivalent to chronic atrophic gastritis in Western medicine.

Intervention • The research team randomly divided participants into an intervention group (n = 48) and a control group (n = 48) using a random digits table. The intervention group received fennel mixed with coarse salt for ironing, combined with umbilical moxibustion, whereas the control group received routine care.

Outcome Measures • The study's instruments included the Traditional Chinese Medicine (TCM) Syndrome Score Scale (TCMSSS), Medical Outcome Study (MOS) Short Form 36 (SF-36), and Satisfaction with TCM Nursing Program (STCMNP). Data were collected and analyzed through descriptive statistics a Chi-square test and independent *t* test. A significance level of $P < .05$ was accepted for all statistical analyses.

Results • The intervention group had mean scores that indicated significantly higher decreases in epigastric pain, and increases in quality of life and level of satisfaction with the traditional Chinese nursing care than the control group did ($P < .05$).

Conclusions • The traditional Chinese nursing care was able to improve epigastric pain, enhance quality of life, and increase satisfaction with the traditional Chinese nursing care. (*Altern Ther Health Med.* 2022;28(7):88-94).

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Epigastric pain is a common gastrointestinal disease that Traditional Chinese Medicine (TCM) characterizes as pain in the middle of the upper abdomen near the heart fossa. The Spleen and Stomach Diseases Branch of the China Association of TCM reached consensus as experts for a TCM diagnosis of epigastric pain.[1] The association categorizes epigastric pain in TCM into eight patterns: (1) a cold exogenous pathogen invading the stomach; (2) spleen-stomach damp heat;

(3) spleen-stomach vacuity cold; (4) a cold-heat complex; (5) an improper diet; (6) live-stomach disharmony; (7) stomach blood stagnation; or (8) stomach Yin in deficiency.

Spleen-stomach vacuity cold is the primary pattern, accounting for 75% of patients with epigastric pain.[2] According to Fang et al,[3] the criteria for diagnoses in Western medicine include as the main symptoms: (1) epigastric dull pain, (2) abdominal distention, (3) nausea and belching, (4) anorexia, (5) emaciation, and (6) anemia. According to Zhang et a[4] and Li et al,[5] the criteria for diagnoses in TCM include as the main symptoms: (1) epigastric dull pain; (2) a liking for warmth and pressure; (3) pain worsen when patient is hungry or catching a chill; (4) relief after food intake and warmth; (5) a lusterless facial complexion; (6) lack of strength; (7) intolerance to cold, (8) lack of warmth in the extremities; (9) a bland taste in the mouth and salivating during sleep, (10) a pale tongue and tooth marks on the margins of the tongue, with tongue fur; (11) a deficient or slow pulse; (12) fatigue; (13) a thin, sloppy stool; (14) lack of appetite and anorexia.

The principle for administering nursing care in TCM according to the spleen-stomach vacuity cold pattern is to "harmonize the stomach and fortify the spleen, boost Qi, and relieve pain."[4]Although currently many treatment protocols exist for epigastric pain, the majority of them tend to be cure the symptoms not the disease; western medicine has certain effects on short-term healing that aren't good enough for long-term efficacy.[6]

Practitioners have used TCM widely for epigastric pain. Zhang et al found TCM to be remarkably effective, with a low relapse rate.[7]In the philosophy of TCM, epigastric pain manifests with algogenesis, and spleen-stomach vacuity is the disease's basic pathogenesis.

According to the TCM theory of treating both the tip and the root, epigastric pain requires the caregiver to dissipate cold and relieve pain, the treatments for the tip, which warm and supplement the spleen and stomach, the treatments for the root.

Ironing is an external therapy in TCM, with a practitioner applying heat to local areas of the human body on certain acupoints, moving back and forth and rotating in a timely manner. The warmth penetrates a patient's channels and collateral as well as blood vessels through peripheral pores, to warm the channels and free the network vessels, quicken the blood, and move qi. The pharmacological mechanism of fennel when used for ironing mainly involves gastrointestinal dynamics, and the herb can facilitate smooth-muscle contractions of the exsomatize colon through extracellular calcium ion (Ca2+) influx, mediated by the muscarinic receptor (M receptor).[8] This promotes the recovery of gastrointestinal motility and function as well as improves the intestinal microbial balance.[9]

Warming moxibustion is commonly used as an external therapeutic in TCM for epigastric pain with a pattern of spleen-stomach vacuity cold. It stimulates acupuncture points using the properties and warmth of a moxa stick and achieves the effects of warming the channels and dissipating cold, quickening the blood, and freeing the network vessels.[10]

Zhang indicates that the navel's skin is thin, the subumbilical peritoneum is covered with a rich venous network, and the branch of the inferior abdominal artery also passes through the umbilicus.[11] After penetrating the skin in the umbilicus, the drug molecule of moxa sticks can directly diffuse into the venous network or the branch of the inferior abdominal artery and then enter the systemic circulation, which is conducive to the penetration and absorption of drug molecules.[11]

Umbilical moxibustion can expand the blood vessels and accelerate the absorption of drugs through the infrared thermal radiation that is produced by the burning of the mosa. At the same time, to relieve inflammation and promote gastric mucosal repair, the infrared radiation can stimulate the hydrogen bonds of the body's biomolecules: (1) to produce a stimulated, coherent, resonance-absorption effect; (2) regulate the activity of the neurohumoral system; and (3) promote the release of anti-inflammatory substances, motilin, gastrin, and other brain-gut peptides.[12] Some studies have reported that umbilical moxibustion can relieve epigastric pain, decrease symptoms, and shorten the hospitalization time.[13,14]

The current study aimed to explore effectiveness of traditional Chinese nursing care using fennel mixed with coarse salt for ironing, combined with umbilical moxibustion, for epigastric pain with a pattern of spleen-stomach vacuity cold.

METHODS

Participants

The research team designed a randomized control trial (RCT). The study was conducted at Ruikang Affiliated Hospital of Guangxi University of Chinese Medicine in the capital city of the Guangxi Zhuang autonomous region in the People's Republic of China. The hospital integrates Chinese and Western medicine. Potential participants were patients who had been admitted to the hospital between October and November 2020 and who had received a diagnosis of epigastric pain with spleen-stomach vacuity cold pattern.

Potential participants were included in the study if they: (1) had received a diagnosis of chronic atrophic gastritis under the criteria that Western medicine uses; (2) had received a diagnosis of epigastric pain with the spleen-stomach vacuity pattern under the criteria that TCM uses; (3) had had an endoscopic examination that showed the presence of mucosa membranes that were red and white at intervals, usually with dominant white mucous membranes, mucosal folds that had flattened or disappeared, and some mucosal blood vessels that were exposed, which might be accompanied by granular or tuberous mucosa[15]; (4) had had a pathological examination, using a gastric mucosal biopsy, that showed the presence of atrophy and intestinal metaplasia of the inherent glands in the mucosa; and (5) were males and females older than 18 years of age.

Potential participants were excluded from the study if they: (1) had other digestive diseases, such as chronic nonatrophic gastritis, peptic ulcer, gastrointestinal bleeding, or malignant tumor of the digestive tract, (2) had complications from diseases of the cardiovascular, nervous, respiratory, urinary or hematologic systems; (3) had digestive problems and require GI endoscopy; (4) were part of special populations, such as pregnant women, psychiatric patients, critically ill patients, patients with a disturbance of consciousness, or patients with aphasia; (5) had epigastric pain caused by diseases of other systems; or (6) had atopy; or (7) were allergic to fennel or moxa. (8) was intolerance to the taste of moxa during treatment. There were no people dropped during the study, the patients had good compliance on both groups, no nursing adverse events occurred during intervention.

Participants who met certain rejection criteria after inclusion were withdrawn from the study and considered to be noncompliant. The rejection criteria included: (1) receipt of other TCM treatments, such as acupuncture, needling, massage, and cupping during the period of study, because it might affect the results; (2) a misdiagnosis and an erroneous admission to the study because the disease didn't actually fit the TCM pattern type; and (3) failure to follow therapeutic treatment for the overall treatment time, or an inability to be compliant with treatment protocols during the therapeutic process due to various treatment statuses, such as :was oversensitive to burning sensation during moxibustion, or the local skin was very easy to scalded when ironing.

All participants in both groups voluntarily joined the study and signed written inform consents. The ethics committee of Ruikang Hospital, affiliated with Guangxi University of Chinese Medicine, approved the study's protocols (Ethic Number: KY2020-096). We did not prospectively register this trial because of inexperience, our study' protocol met the relevant requirements of the Declaration of Helsinki.

Procedures

Research hypothesis. The research team hypothesized that in the intervention group: (1) the mean score for epigastric pain postintervention would be lower than that at baseline, showing a decrease; (2) the mean score postintervention for QoL would be higher than that in the control group, and (3) the mean score postintervention for satisfaction with traditional Chinese nursing care would be higher than that in the control group.

Pilot study: Sample size. The research team had conducted a pilot study with 20 patients who had epigastric pain with the spleen-stomach vacuity cold pattern. Data were collected on quality of life (QoL) at baseline and postintervention. The formula for estimation of sample size for two samples was: $N1 = N2 = 2(t\alpha + t\beta) \times 2s2 / \delta 2$. On the basis of a literature review as well as the pilot study, with a level of significance of $\alpha = 0.05$ and $\beta = 0.10$, the research team determined that the allowable error was $\delta = 7.71$ and the standard deviation was 7.06 for QoL scores in a comparison of the results for the control and intervention group. The team determined that the sample size for each group was 48 participants. Samples sizes of 38 participants in each group would have been sufficient on a basis of significance of 5%. Assuming a 20% dropout rate, the research team recruited 96 patients for the current study.

Diagnosis. The doctor-in-charge in the gastrointestinal ward diagnosed participants with the epigastric pain

Randomization. Patients were enrolled in order of hospital admission. The enrolled patients were randomly assigned in a ratio of 1:1 to a control group or an intervention group, using a random digit table.

Nursing procedure. After receiving approval from the ethics committee of the hospital affiliated to the research team, they met with the department's director and the head nurse of the gastrointestinal ward to explain the study and ask for permission for data collection. The head nurses delivered volunteer recruitment information to patients in the ward and provided a list of patients, using code numbers, who had been diagnosed with epigastric pain by a doctor-in-charge and who volunteered to join the study. The research team explained the study's aims, procedures, and the human rights of and protection for the participants and asked the volunteers to sign a written inform consent if they decided to participant in the study.

Intervention. The control group received routine nursing care. In addition to routine care, the intervention group received dialectical nursing therapy—fennel mixed with coarse salt for ironing, combined with umbilical moxibustion.

Outcome measures. Data were collected to evaluate the effectiveness of the TCM nursing care for epigastric pain with a pattern of spleen-stomach vacuity cold. The outcome measures included the TCM Syndrome Score Scale (TCMSSS) to evaluate changes in epigastric pain,[16] the Medical Outcome Study (MOS) 36-item Short Form (SF-36) to evaluate QoL,[17,18] and the TCM Nursing Program (TCMNP) to evaluate participants' satisfaction with the traditional Chinese nursing care. Both the control and intervention groups completed the TCMSSS, SF-36, and TCMNP at baseline and at one month postintervention.

Intervention

Traditional nursing care. The research team based the care on the traditional Chinese nursing program that the State Administration of TCM and Pharmacy issued.[5] Both groups received routine nursing care in terms of exercise, diet, and emotional support. The nurses: (1) assisted participants in obtaining bed rest during acute exacerbations of gastric pain; (2) guided them to alternate work and rest, regularly exercise, and obtain adequate sleep during remissions; (2) recommended a diet to fortify the spleen that included pork maw, fish, mutton, chicken, longan, jujube, lotus seed, and ginger; (3) provided empathy, teleotherapeutics, and homeopathy to relieve participants' anxiety and aggravation due to enduring pain.

Figure 1. Sachet for Ironing Composed of 300 g of Fennel Seed and 200 g of Coarse Salt. The nurses made a sachet that was 40 cm × 30 cm with 300g of fennel seed and 200g of coarse salt (Photos 1A and 1B) shows. The nurses ironed the acupuncture points using the sachet for 5 min, followed by placing a dressing on the gastric cavity.

1A **1B**

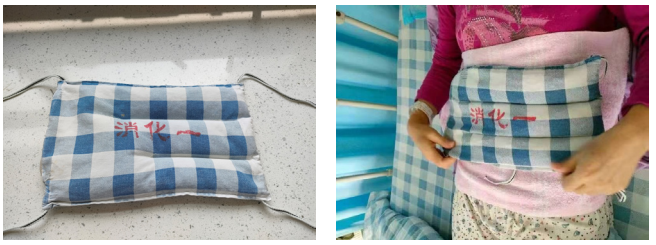


Figure 2. Cone-shaped Mosa and Dough Used for Umbilical Moxibustion. The nurses made the dough of wheat flour and water, formed it into a bowl, and divided it into pieces that were 4 cm in diameter, 3 cm in thickness and 3 cm in diameter, with a round hole in middle (Figure 2A). The nurses made the cone-shaped mosa with moxa floss, and the cone was 4 cm in diameter and 5 cm in height (Figure 2B).

2A **2B**

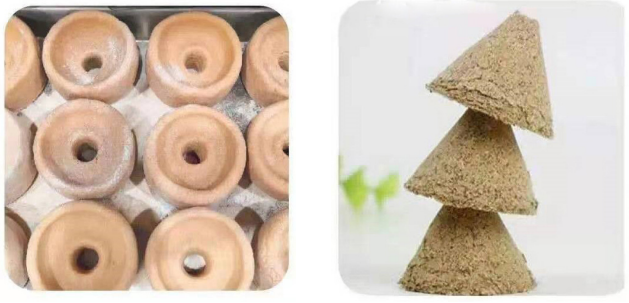
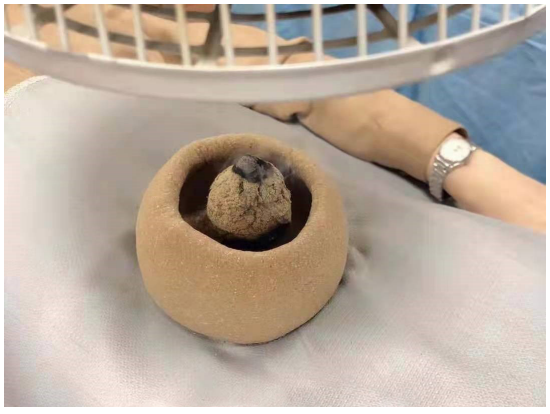


Figure 3. Approach for Umbilical Moxibustion. The nurses fill up the patient's navel with the powder preparation; place the dough on the participant's abdomen, aligning the navel with the hole in the dough; and then place the moxa cone in the powder preparation's center on the bottom of the dough. Then they ignite it.



Fennel mixed with coarse salt for ironing. First, the nurses made a sachet with a size of 40 cm × 30 cm (Figure 1A and 1B). They blended 300g of fennel seed (sourced from Guangzhou Baicaotang Pharmaceutical Co., Ltd. China) with 200g of coarse salt (sourced from Nanning Branch of Guangxi Salt Industry Group Co., Ltd. China)in an iron pan, stir-frying until the mixture until it gave out a rich fragrance, and then placed the compound in the sachet. Second, the nurse performed abdominal massage in which the participants took a supine position. The nurse stood on the participant's right side and massaged his or her abdomen 20 times clockwise with the palm, after applying a lubricating oil.

The nurses then used a pushing manipulation with a one-finger meditation, a kind of massage technique (the thumb pulp or fingertip was attached to the operation site, and the force is continuously applied to the meridian points through the swing of the wrist and the flexion and extension of the thumb joint.), on the acupuncture points Qihai, Guanyuan, Chungwan, Xiawan, and Tianshu, taking one min for each acupoint. They also pressed the acupoints for an inspiratory duration and loosened the pressure for an expiratory duration. Third, the nurses ironed the acupuncture points using the sachet for 5 min, followed by placing a dressing on the gastric cavity. They performed that procedure once per day for 30 min/per time, 7 days a week for 4 weeks.

Precautions for the operation included requiring that: (1) the nurses cut their nails before the operation; (2) Massage should be even, soft, strong and slow; (3) the nurses selected the acupoints accurately; (3) the intensity of the massage depend on participants' local soreness and distention; (4) the nurses gave instructions to the participant to urinate before the massage, and (5) the operation didn't take place until 30 min after meals.

Umbilical moxibustion. In preparation, the nurses made the dough out of wheat flour and water; formed it into the shape of bowls; and divided it into pieces 4 cm in diameter, 3 cm in thickness, and 3 cm in diameter, with a round hole in middle (Figure 2A). The formula for the powder preparation's composition included Pinellia, Scutelaria, dried ginger, ginseng, licorice, coptis, jujube, coix seed, and bergamot. (sourced from Guangzhou Baicaotang Pharmaceutical Co., Ltd. China) The nurses made the cone-shaped moxa using moxa floss (sourced from Guangxi Xianzhu Traditional Chinese Medicine Technology Co., Ltd. China) that was 4 cm in diameter and 5 cm in height (Figure 2B).

For the operation, the participant took a supine position and exposed the mosibustion site. The nurse then sterilized the periumbilical area with 75% alcohol, filled the navel up with the powder preparation, and placed the dough on the abdomen, aligning the navel with the hole in the dough. The nurse then sprinkled some of the power preparation into the dough's hollow bottom, at 2 cm in thickness; placed the moxa cone in the powder preparation's center on the dough's bottom; and ignited it, burning 3 columns for 10 mins per time, they performed that procedure once per day, 7 days a week for 4 weeks. (Figure 3).

Table 1. Traditional Chinese Medicine (TCM) Syndrome Score Scale (TCMSSS).

Symptom	None (Score of 0)	Mild (Score of 3)	Moderate (Score of 6)	Severe (Score of 9)
Stomach pain	Absence of symptoms	• Painful but tolerable • No sleep disturbance	• Obvious and unbearable pain • analgesics required • No sleep disturbance	• Severe and unbearable pain • Requires analgesics • Severe sleep disturbance, possibly accompanied by autonomic disturbance or passive posture
Distention, oppression in stomach	Absence of symptoms	• Mild distention in stomach • Tolerable symptoms	• Fullness and oppression in stomach • Remission on fasting • Anorexia	• Persistent and unbearable distention and oppression for quite a long time.
Belching and acid reflux	Absence of symptoms	• Belching and acid reflux occasionally • Lighter belching	• Belching and acid reflux frequently • Louder belching	• Persistent belching and acid reflux • Interruption of daily life
Torpid intake	Absence of symptoms	• Poor appetite • Less than 25% of normal food intake	• Loss of appetite • Poor sense of taste • Reduced food intake, by 25% to 50%	• Anorexia • No hunger sensation

Precautions for the operation included having the nurse: (1) observe participants' responses during the operation; (2) observe the skin's condition after moxibustion, including identifying symptoms such as slightly red periumbilical skin, with diaphoresis being considered to be normal; (3) clean the periumbilical skin and keep the powder preparation in the umbilicus; (4) apply an external dressing for 4 hours and afterward washing the umbilicus with warm water; (5) provide the umbilical moxibustion once a day every week for 4 weeks for one course.

Table 2. Participant's Demographics at Baseline (N = 96)

Variables	Intervention Group (n = 48) n (%) Mean ± SD	Control Group (n = 48) n (%) Mean ± SD	Statistics	*P* value
Males	13 (27.08)	18 (37.50)	$\chi^2 = 1.191$	.275
Females	35 (72.92)	30 (62.50)		
Age	55.65 ± 13.29	55.19 ± 9.95	$t = -1.191$	.849
Duration of hospitalization	8.04 ± 3.55	7.83 ± 3.13	$t = -0.305$	.761

Outcome Measures

TCMSSS. The National Administration of TCM issued the TCMSSS[5] as a tool for the measurement of improvements in epigastric pain. This questionnaire consists of 4 items to describe the symptoms of epigastric pain: stomachpain, distention and oppression in the stomach, belching and acid reflux, torpidity intake. Each item has four rating choices. Each symptom was qualified and scored according to the items, an accurate response to each item was rated as: no symptom = score of 0 , mild symptoms = score of 3, mild symptom = score of 6, severe symptom = score of 9. The total scores for the questionnaire was ranged from 0-36, the higher the sum of score, the more severe the patient's epigastric pain symptoms. (Table 1).

QoL. The SF-36 was constructed to survey health status in studies of medical outcomes. The study includes nine subdimensions: physiological function (PF), role physical (RP), physical pain (BP), general health (GH), vitality (VT), social function (SF), role emotion (RE), mental health (MH), and health transition (HT). Ware and Shelbourne [17] provide a history of the development of the SF-36, the origin of its specific items, and the logic underlying their selections. Li et al developed the Chinese version of the SF-36 scale, evaluated its scaling and scoring assumptions, and its reliability and validity.[18] The Chinese version of the SF-36 has achieved conceptual equivalence and provided psychometric scaling assumptions well enough to warrant its wide use in China.

S**TCMNP.** The research team interview the participants about their satisfaction. Satisfaction is classified as satisfaction, general, (neither satisfaction nor dissatisfaction) and dissatisfaction to TCM nursing program.

Statistical Analysis

The study used the Statistical Package for Social Science (SPSS) software package, version 20, (resoured from Xishu Software (Shanghai) Co., Ltd. China) to analyze the data. The research team analyzed the demographic data by determining the means and standard deviations (SDs). The team performed a comparison between the groups for measurement data using two independent sample *t* tests and a comparison between the groups for enumeration data using a Chi-square test. A *P* value of <.05 was considered to be statistically significant in all analyses.

RESULTS

Participants

The study enrolled 96 participants into the study, 48 in each group, and analyzed their data (Table 2). The intervention group included 13 males and 35 females, with an mean age of 55.65 ± 13.29 years and a mean hospitalization time of 8.04 ± 3.55 days. The control group included 18 males and 30 females, with an average age of 55.19 ± 9.95 years and an average hospitalization time of 7.83 ± 3.13 days.

At baseline, no statistically significant differences existed between the groups in terms of gender, age, pattern type, duration of hospitalization, or other general data (*P* > .05), with the results of the two groups being comparable. No participants were removed during the course of the study.

Table 3. Traditional Chinese Medicine Syndrome Score Scale (TCMSSS) (N = 96)

Group	Stomach Pain				Distention and Oppression in the Stomach				Belching and Acid Reflux				Torpid Intake			
	Baseline Mean ± SD	Postintervention Mean ± SD	*t*	*P* value	Baseline Mean ± SD	Postintervention Mean ± SD	*t*	*P* value	Baseline Mean ± SD	Postintervention Mean ± SD	*t*	*P* value	Baseline Mean ± SD	Postintervention Mean ± SD	*t*	*P* value
Control (n = 48)	4.25 ± 1.73	3.31 ± 1.42	3.469	.001[a]	3.94 ± 1.54	3.25 ± 1.36	3.081	.003[a]	2.50 ± 2.18	2.13 ± 1.75	2.205	.032[a]	1.69 ± 1.74	1.44 ± 1.64	1.663	.103
Intervention (n = 48)	4.13 ± 1.71	1.88 ± 1.82	6.398	<.001[b]	4.06 ± 1.58	1.56 ± 1.51	7.393	<.001[b]	2.31 ± 1.98	1.06 ± 1.45	4.463	<.001[b]	1.69 ± 1.85	0.81 ± 1.35	3.714	.001[b]
t	0.356	4.322			-0.394	5.743			0.452	3.244			0.000	2.043		
P value	.723	<.001[c]			0.695	<.001[c]			.652	.002[c]			1.000	.044[c]		

[a]$P < .05$, indicating that the intervention group had a significant decrease in stomach pain, distention and oppression in the stomach, and belching and acid reflux, between baseline and one month postintervention.
[b]$P < .05$, indicating that the control group had a significant decrease in stomach pain, distention and oppression in the stomach, belching and acid reflux, and torpidity of intake between baseline and one month postintervention.
[c]$P < .05$, indicating that the intervention group had significantly lower stomach pain, distention and oppression in the stomach, belching and acid reflux, and torpidity of intake at one month postintervention that the control group did.

Table 4. The Effectiveness of Traditional Chinese Nursing Therapeutics

Group	n	Excellent	Good	Normal	Poor	Total effective rate(%)	χ^2	*P* value
Intervention	48	38 (79.17)	7 (14.58)	1 (2.08)	2 (4.17)	95.83	4.019	.045
Control	48	32 (66.66)	5 (10.42)	3 (6.25)	8 (16.67)	83.33		

Table 5. Comparison of SF-36 Scores (N = 96)

Index		Control Group (N = 48) Mean ± SD	Intervention Group (N = 48) Mean ± SD	*t*	*P* value
PF	Baseline	52.92 ± 7.64	53.85 ± 6.70	-0.639	.524
	One month postintervention	74.17 ± 5.29	71.77 ± 5.41	2.194	.031[a]
RF	Baseline	35.42 ± 14.43	33.85 ± 14.11	0.536	.593
	One month postintervention	72.40 ± 17.29	65.10 ± 17.67	2.043	.044[a]
BP	Baseline	36.15 ± 12.20	36.77 ± 12.25	-0.251	.803
	One month postintervention	80.54 ± 9.83	75.63 ± 10.97	2.313	.023[a]
GH	Baseline	37.19 ± 5.83	39.06 ± 5.42	-1.632	.106
	One month postintervention	52.54 ± 3.85	50.75 ± 3.87	2.272	.025[a]
VT	Baseline	34.21 ± 7.14	34.90 ± 8.15	0.200	.842
	One month postintervention	53.96 ± 7.29	51.25 ± 5.60	2.041	.044[a]
SF	Baseline	43.51 ± 9.41	44.67 ± 9.31	-0.610	.544
	One month postintervention	74.08 ± 13.23	68.29 ± 13.75	2.101	.038[a]
RE	Baseline	46.53 ± 21.46	41.67 ± 24.31	1.039	.302
	One month postintervention	72.92 ± 22.45	61.81 ± 25.72	2.255	.026[a]
MH	Baseline	36.75 ± 10.43	34.67 ± 7.76	1.111	.269
	One month postintervention	58.96 ± 9.48	54.33 ± 11.58	2.142	.035[a]
HT	Baseline	36.46 ± 16.27	30.21 ± 17.07	1.836	.070
	One month postintervention	59.90 ± 17.67	52.08 ± 16.97	2.209	.030[a]

[a]$P < .05$, indicating that the intervention group's mean scores were significantly higher than those of the control group at one month postintervention.

Abbreviations: PF, physiological function; RF, role physical; BP, physical pain; GH, general health; VT, vitality; SF, social function; RE, role emotion; MH, mental health; HT, health transition.

Epigastric Pain

The intervention group had a significant decrease in stomach pain, distention and oppression in the stomach, and belching and acid reflux between baseline and one month postintervention, with $P = .001$, $P = .003$, and $P = .032$, respectively (Table 3). The control group had a significant decrease in stomach pain, distention and oppression in the stomach, belching and acid reflux, and torpidity of intake between baseline and one month postintervention, with $P < .001$, $P < .001$, $P < .001$, and $P = .001$, respectively.

The intervention group had significantly lower stomach pain, distention and oppression in the stomach, belching and acid reflux, and torpidity of intake at one month postintervention than the control group did.

The total effective rate of nursing in the intervention group was 95.83%, which was higher than the 83.33% in the control group (table 4), and the difference was statistically significant ($P < .05$).

Quality of Life

Table 4 shows that no statistically significant differences existed in the SF-36 scores between the intervention and control groups at baseline ($P > .05$). At one month postintervention, the intervention group's mean scores for the PF ($P = .031$), RP ($P = .044$), BP ($P = .023$), GH ($P = .025$), VT ($P = .044$), SF ($P = .038$), RE ($P = .026$), MH ($P = .035$), and HT ($P = .030$) were significantly higher than those of the control group.

Nursing Satisfaction

Table 5 shows that the intervention group's satisfaction with the traditional Chinese nursing

Table 6. Satisfaction With Traditional Chinese Nursing Care

Group	n	Satisfaction n (%)	Neither satisfaction Nor dissatisfaction n (%)	Dissatisfaction n (%)
Intervention	48	44 (91.67)	3 (6.25)	1 (2.08)
Control	48	34 (70.84)	7 (14.58)	7 (14.58)
χ^2	7.382			
P value	.025[a]			

[a]$P < .05$, indicating that the intervention group's satisfaction was significantly higher than that of the control group at one month postintervention.

care was significantly higher than that of the control group ($P < .05$).

DISCUSSION

With respect to ironing mixed with warming moxibustion, the current study's finding were consistent with the results of previous research.[8-14] Therefore, the current research team recommends the use of the treatments to care for epigastric pain with pattern of spleen-stomach vacuity cold, because of their easy application, cost-effectiveness, high efficiency, high compliance, and low adverse reactions.

The current study had some limitations. The research instruments, such as the Medical Outcome Study Short Form 36-item and TCM Nursing Program used tend to reflect individual subjective feelings; therefore, more objective indicators for evaluations are still needed to explore the effects of a traditional Chinese nursing intervention on relieving epigastric pain. In addition, the best timing for ironing and moxibustion often depend on a patient's response, which raises an issue of standardization of the duration of ironing and moxibustion. This issue needs to be improved in the near future. Moreover, conducting an RCT with larger samples and a long-term follow-up is recommended in the future.

AUTHORS' DISCLOSURE STATEMENT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCE

1. Zhang SS, Li QG, Huang SP, Huang SG. Consensus on TCM Diagnosis and Treatment of Chronic Superficial Gastritis (2009, Shenzhen). *Chinese Journal of Integrated Traditional and Western Medicine on Digestion.* 2010;18(03):207-209. Original work published in Chinese.
2. Li JX. Expert consensus on TCM diagnosis and treatment for epigastric pain. *J Tradit Chin Med*. 2016;57(1):87-90. Original work published in Chinese. doi:10.13288/j.11-2166/r.2016.01.023
3. Fang JY, Du YQ, Liu WZ, et al. Consensus on chronic gastritis in China (2017, Shanghai). *Clin J Gastroenterol*. 2017;22(11):670-687. Original work published in Chinese. doi:10.3969/j.issn.1008-71252017.09.11.007
4. Zhang SS, Zhou Q. Expert consensus on TCM diagnosis for epigastric pain. *Journal of Traditional Chinese Medicine.* 2017; 58(13):1166-1170. http://doidoi:10.13288/j.11-2166/r.2017.13.023. (Original work published in Chinese)
5. Li JX, Chen Y. lV B, Wang YG. Consensus on integrated traditional Chinese and western medicine diagnosis for chronic atrophic gastritis (2017). *Chinese Journal of Integrated Traditional and Western Medicine on Digestion.* 2018;26(02):121-131. Original work published in Chinese. doi:10.3969/j.issn.1671-038X.2018.02.003
6. Yue HM, Zeng ZZ. Study on Buzhong Yiqi decoction combined with warming acupuncture and moxibustion in treatment of gastric pain of spleen-stomach deficiency and cold type. *Zhonghua Zhongyiyao Xuekan*. 2020;38(09):199-201. Original work published in Chinese. doi:10.13193/j.issn.1673-7717.2020.09.050
7. Zhang M, Feng HY, Yu WQ. Analysis on traditional Chinese medicine in the diagnosis and treatment of gastric ulcer. *Guangming J Chin Med*. 2021;36(03):349-352. Original work published in Chinese.
8. Asano T, Aida S, Suemasu S, Mizushima T. Anethole restores delayed gastric emptying and impaired gastric accommodation in rodents. *Biochem Biophys Res Commun*. 2016;472(1):125-130. doi:10.1016/j.bbrc.2016.02.078
9. He YK. Efficacy of fennel ironing method on the recovery of gastrointestinal function after gastroenteritis. *Wuhan Daxue Xuebao Yixue Ban*. 2017;38(05):828-832. Original work published in Chinese. doi:10.14188/j.1671-8852.2017.05.034
10. Gong XR. Application the effect of external therapy nursing care of TCM in patients with gastric pain due to deficiency of spleen and stomach. *Tianjin Journal of Nursing.* 2020;28(01):93-95. Original work published in Chinese. doi:10.3969/j.issn.1006-9143.2020.01.027
11. Zhang L. Observation on treating 76 cases of gastralgia of the Piwei Xuhan type with medicine and moxibustion. *Clinical Journal of Chinese Medicine.* 2018;10(26):44-46. Original work published in Chinese.
12. Beyder A. Gut development on a full stomach. *Nat Rev Gastroenterol Hepatol.* 2018;15(7):394-395. doi:10.1038/s41575-018-0012-y
13. Liu ML, Wang ML. Observation of the effect of Sizi San ironing combined with umbilical moxibustion on epigastric pain with spleen and stomach deficiency and cold. *Clinical Journal of Chinese Medicine.* 2020;12(15):125-126. Original work published in Chinese. doi:10.3969/j.issn.1674-7860.2020.15.053
14. Zhou RJ, Liao ZB, Yang J. Clinical efficacy observation of umbilical moxibustion assisted in treating abdominal pain patients with liver stagnation and spleen deficiency. *Medicine (Baltimore).* 2019;14(05):600-602. Original work published in Chinese. doi:10.16121/j.cnki.cn45-1347/r.2019.05.30
15. Tytgat GNJ. The Sydney System: endoscopic division. Endoscopic appearances in gastritis/duodenitis. *J Gastroenterol Hepatol*. 1991;6(3):223-234. doi:10.1111/j.1440-1746.1991.tb01469.x
16. ZHAO YH. Clinical Analysis on Traditional Chinese Medicine (TCM) and Attached Huang Pu Soup Treating Spleen and Stomach Type Cold Stomach. *China & Foreign Medical Treatment.*2016;35(28):181-182+185.(Original work published in Chinese)
17. Ware JE Jr, Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med Care*. 1992;30(6):473-483. doi:10.1097/00005650-199206000-00002
18. Li L, Wang H, Shen Y. Development and psychometric tests of a Chinese version of the SF-36 Health Survey Scales. *Chin J Prev Med*. 2002;36(2):109-113. doi:10.3969/j.issn.0253-9624.2020.02.016