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Three Courses of Tianjiu Therapy in Sanfu Days for Chronic Asthma: A Clinic Efficacy Observation Trail

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Abstract

Objective: This study was aimed to compare the efficacy among chronic asthma patients who received 1 course treatment, 2 courses treatment and 3 courses treatment of Tianjiu Therapy in Sanfu Days. Methods: This study was comparing efficiency with 3 courses (baseline, the 1st course, the 2nd course, the 3rd course) of Tianjiu Therapy for asthma in 91 chronic asthma patients. For each course, patients received 3 times Tianjiu Therapy treatments, pretreatment assessment and posttrestment assessment. Results: 91 asthma participants completed at least 3 courses of Tianjiu Therapy in Sanfu Days. 1) Days for asthma attacked during the last 12 months; the frequency for asthma attacked during the last 12 months; incidence of admitting to clinic (Integrated Chinese Medicine & Western Medicine Clinic) when asthma attack during the last 12 months; times of admitting to clinic; times of solving by persistent medicine; times of solving by own medicine when asthma attack during the last 12 months; and symptoms associated with Chinese medicine of waking by asthma symptoms, lack of strength, lassitude, rapid or difficult breathing were improved at the 1st course, the 2nd course and the 3rd course compared with baseline (All $P < 0.05$); 2) The incidence of admitting to In-patient Hospital and solving by persistent prescription when asthma attacked; the frequency of Chinese Herbal Medicine used during Tianjiu Therapy; the status of asthma under controlled and no improved by self-evaluation were similarly improved at the 2nd course and the 3rd course (All $P < 0.05$); 3) Incidence of admitting to A & E for asthma attacked during the last 12 months, and other treatments except Western Medicine, Chinese Herbal Medicine, and Acupuncture & Moxibution during the last 12 months were improvement at the 3rd course (All $P < 0.05$); 4) Symptoms associated with

Chinese medicine of spontaneous sweating and reduction of exercise were improved at the 1st course ($P < 0.05$); 5) Symptom of diarrhea after intake of oil food was became a little bad at the 2nd course and the 3rd course ($P < 0.05$); 6) The frequency of bronchodilator used when asthma attack was reduced in the 1st course and the 2nd course (All $P < 0.05$); 7) Lung function of FEV1 and FEV1/FVC(×100) were a little improvement, but have no significant statistical difference ($P > 0.05$); 8) The total score of ACT at the 1st course, the 2nd course, and the 3rd course did not improved significantly (All $P > 0.05$). Conclusion: After Tianjiu Therapy in Sanfu Days participants have achieved good efficiency, and as the course get longer, the efficiency of more symptoms associated with chronic asthma were improved. Suggest patients with chronic asthma continuous receive Tianjiu Therapy in Sanfu Days which will be a feasible treatment.

Keywords

Tianjiu Therapy, Sanfu Days, Asthma

1. Introduction

Bronchial asthma is a chronic airway inflammatory disease, which belongs to "asthma disease" of the Traditional Chinese Medicine [1], performance of breathing difficulties, even open mouth and carry up shoulder. Western Medicine for the treatment of asthma, β2-adrenoceptor agonist are the first-line drug for diastolic bronchospasm, mainly stay on the stage of focusing on the application of glucocorticoid to prevent airway remodeling stage, but glucocorticoids are still not fully meet the clinical needs [2]. It has a long history in the struggle with asthma disease of Traditional Chinese Medicine (TCM).

Modern research proved, acupoint sticking could enhance the body's non-specific immune function and function of pituitary-adrenal cortex system, reduce the body's allergic condition, achieve the effect of anti-allergic, and could remove bronchospasm and promote exudate absorption directly, so as to relieve asthma attack [3]. Tianjiu Therapy is sticking external specific acupoints and trouble place by certain Chinese medicine and trouble place, make local hyperemia, blister, or even fester, like post-moxibustion sore to treat disease , it is a kind of unti-hot moxibustion therapy [4]. Sanfu Days are the highest temperature days through a year, start from summer solstice, according to the arrangement of Heavenly Stems and Earthly Branches, the third Geng-ri is the first Fu Day, the forth Geng-ri is the second Fu Day, and the first Geng-ri after the beginning of autumn is the last Fu Day. Tianjiu Therapy in Sanfu Days for asthma follows the rule of the external treatment to cure internal disease and the methods of curing winter disease in summer of TCM. Tianjiu Therapy in Sanfu Days has a very special characteristic of medical timing of treatment therapy, on Sanfu Days, Positive-qi of nature and human body is most strongest in the year, stick herbal cake made up of some medicine with the feature of spicy and hot,

stimulating on the acupuncture point, to achieve the purpose of regulating Yin and Yang, preventing and curing of disease through the function of both acupuncture point stimulation and drug infiltration absorption. It is widely used in the treatment of asthma and other cold symptoms because the operation is simple, safe and reliable, lasting for many years in the clinical curative effect [5]. In recent years, with the deepening study, Tianjiu Therapy in Sanfu Days has got great progress with asthma controlled. Now it was widely applied in the clinical treatment of asthma as the curative effect of Tianjiu Therapy was widely recognized, and more and more people are receive this treatment method for prevention and treatment of asthma [6]-[14]. We have already conducted an initial trail which compared 1 year of Tainjiu Therapy treatment with placebo control group, and a clinical trial which compared two years versus 1 year Tianjin Therapy in Sanfu Days for chronic asthma [15] [16]. In the first study, it was found that Tianjiu Therapy can reduce the need for medications to control asthma, improved the low quality of life with asthma patients; In the second study, it was proved that the effect of 2 years Tianjiu Therapy was not as effective as 1 year such treatment for asthma, but the second year Tianjiu Therapy was still need because it has a role to consolidate the curative effect of Tianjiu Therapy for asthma. In the previous two studies, the efficiency of Tianjiu Therapy in Sanfu Days for asthma was proved, but the optimal treatment duration is still unknown. Hence this study was aimed to compare the efficacy among chronic asthma patients who received 1 course treatment, 2 courses treatment and 3 courses treatment of Tianjiu Therapy in Sanfu Days.

2. Methods

2.1. Enrollment Criteria

Asthma patients were recruited from the Orthopedics-Traumatology, Acupuncture and Tui-na Clinical Centre for Teaching and Research, School of Chinese Medicine, The University of Hong Kong.

The patients are in both gender above 13 years old, and the participants must be diagnosed asthma before and have symptoms associated with chronic asthma in the past 12 months. In addition, all patients were needed to meet the following inclusion criteria: difficulty breathing; episodic symptoms of airflow obstruction; symptoms occurring or worsening at night; symptoms awakening the patients at night; chest tightness; cough (worse at night); symptoms occurring or worsening with exercise, viral infections, changes in weather and strong emotions. Patients would be excluded according to one or more of the following exclusion criteria: acute asthma attack; fever and pharyngitis; pregnancy; severe cardiac and pulmonary diseases; tuberculosis; severe heart diseases or with pacemaker; bleeding disorders; keloid; allergy to topical medication; hypersensitive skin condition; diabetes mellitus. And all patients who took part in the study needed to sign consent inform by themselves or their legal guardian (younger than 18 years old).

2.2. Study Design

In this study, participants totally completed at least 3 treatment courses of Tianjiu Therapy in Sanfu Days, pretreatment assessment and posttreatment assessment from 2010 to 2015. Every treatment course consisted 3 treatment sessions (3 treatment sessions were conducted in Sanfu Days in every year: for example, 19 July, 29 July and 8 August 2010 respectively). Both pretreatment assessment and posttreatment assessment included pulmonary function, questionnaires, and ACTs.

Baseline was set at before the first treatment course; Patients 1 year after the first course treatment and before the second course was set as the 1st course; Patients 1 year after the second course treatment and before the third course was set as the 2nd course; Patients 1 year after the third course treatment and before the forth course was set the 3rd course.

All questionnaires (Table 1), ACTs (Asthma Control Test) and lung-function test were completed by face to face interview before every session. Patients must completed 3 treatment courses from 2010 to 2015 (Table 1), and they also must have completed all pretreatment assessments and posttreatment assessments. There were 48 continuous participants and 43 discontinuous participants among the 91 patients. This study conducted a subgroup analysis for continuous group and discontinuous group, but nothing different was found in most of the outcome measurements. Hence this study combined two groups above as study subjects.

The three treatment times from 2010 to 2015 were as follow:

July19, July 29, and August 8, 2010;

July 14, July 24, and August 13, 2011;

July18, July 28, and August 7, 2012;

July 13, July 23, and August 12, 2013;

July18, July 27, and August 14, 2014;

Table 1. Patients distribution.

Year of patients completed	Patients	Year of patients completed	Patients
2010-2011 and 2012-2013	6	2010-2011-2012-2013-2014	5
2010-2011 and 2012-2014	1	2010-2011-2012-2013-2015	2
2010-2011 and 2012-2015	2	2010-2011-2012-2014-2015	1
2010-2011 and 2013-2014	6	2010-2011-2013-2014-2015	5
2010-2011 and 2014-2015	2	2010-2012-2013-2014-2015	3
2010-2012 and 2013-2014	5	2010-2011-2012-2013-2014-2015	12
2010-2013 and 2014-2015	10	2011-2013-2014-2015	3
2011-2012 and 2013-2014	1	2011-2012-2013-2014-2015	11
2011-2012 and 2013-2015	1		
2011-2012 and 2014-2015	4		
2012-2013 and 2014-2015	11		

July 13, July 23, and August 12, 2015.

11 acupoints were selected for attached by sticking patches: DU14, DU12, DU4, BL13 (both side), BL23 (both sides), BL43 (both sides) and EX-B1 (both sides) (Figure 1).

The formula mixed herbs was a combination of the record in the "Zhang's Medicine" and the formula was frequency used in clinical trials just now, the proportion was 2:1:1:1:1:1:1:1: Sinapi Alba 120g, Radix Corydalis Yanhusuo 60 g, Processed Euphorbia kansui 60 g, Asari Herba cum Radice 60 g, Ephedrae Herba 60 g, Processed Radix Aconiti Praeparata 60 g, Cinnamomum cassia 60 g and Eugenia caryophyllata 60 g. These are for around 100 participants used. All of them were milled in to powder and mixed together by ginger juice, and then was made into pieces of cake-like objects, every piece was about 2 grams.

Every acupoint was applied one piece of the herbs, the herbs was stuck in skin by approximately 4 cm × 4 cm hypoallergenic tape (3 M Micropore Tape 1535-3).

2.3. Outcome Measures

Lung function included: FEV1, FEV1/FVC (%).

ACT included: In the past 4 weeks, 1) the times of asthma keep participants from getting as much done at work, school or at home, and 2) the frequency of shortness of breath, and 3) the frequency of asthma symptoms (whee zing, coughing, shortness of breath, chest tightness or pain) wake up at night or earlier than usual in the morning, 4) the frequency of using rescue inhaler or

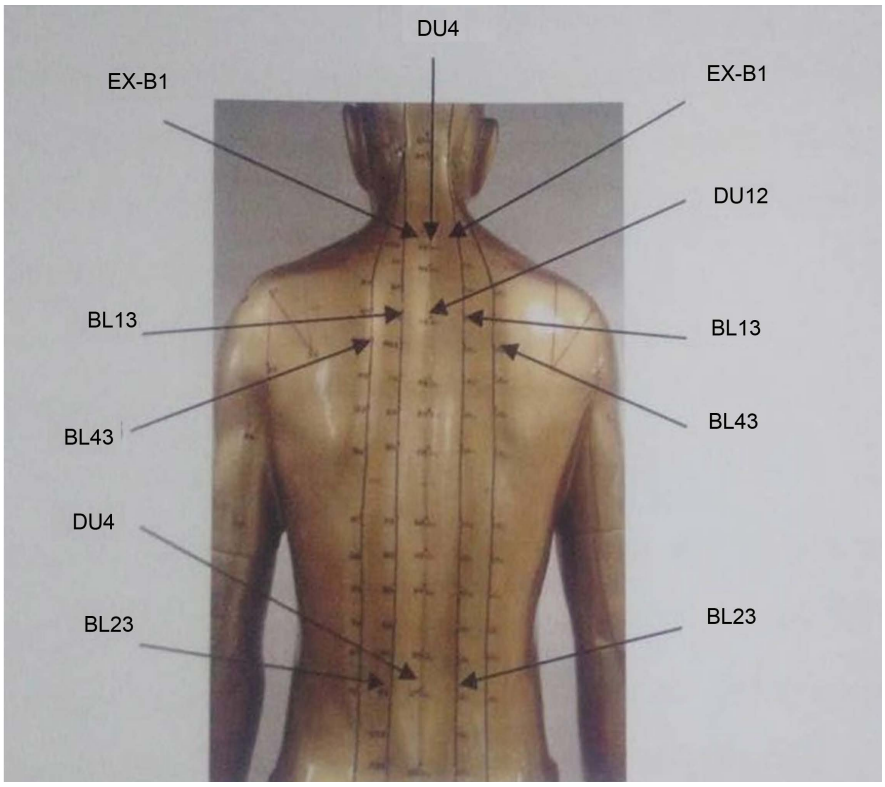

Figure 1. Acupoints selected for Tianjiu Therapy in Sanfu Days.

nebulizer medication (such as albuterol), and 5) the rate of the asthma wad controlled. Participants could fill 1-5 scores for every question.

The questionnaire could be filled physicians "zero" when the participant wanted to fill "NO", and filled "1" when they wanted to fill "YES", For example: "Did you use any Western Medicine when paroxysm in the past 12 months?" if the answer is "YES", then got "1" score, if the answer is "NO", then got "0" score.

Questionnaire included: 1) Asthma first attacked time; 2) Courses of asthma attacked; 3)The frequency and extent of asthma attacked in the past 12 months; 4) Condition of bronchodilator used when asthma attacked in the past 12 months; 5) Situation of asthma care and emergency in the past 12 months; 6) Treatment other than Western Medicine for asthmas in the past 12 months; 7) Asthma under controlled self-evaluation; 8) Cases of 23 asthma symptoms improved or not in the past 12 months.

2.4. Statistical Analysis

Statistical analyses were performed with the Statistical Package for the Social Sciences (SPSS) software program (version 21) for Windows 8.

The data analysized included baseline, the 1st course, the 2nd course, and the 3rd course. Lung function: FEV1, FEV1/FVC (%), and the number of days for asthma signs, the number of days for using any Western Medicine were tested by Nonparametric tests (Friedman Test), the value of the best efficient course was tested by Nonparametric tests (Wilcoxon Signed Test 2 Related-Samples), description analysis was conducted for the percentage of patients with twenty-three symptoms associated with asthma, the percentage of asthma healthy care, the percentage of bronchodilator used, and the percentage of asthma attack.

3. Results

There are 1516 person-time with chronic asthma were recruited from 2010 to 2015: 323 in 2010, 391 in 2011, 283 in 2012, 206 in 2013, 164 in 2014, and 149 in 2015, among them 910 person-time completed Tianjiu Therapy (242 in 2010, 169 in 2011, 132 in 2012, 149 in 2013, 117 in 2014, and 101 in 2015), and among the 910 person-time, 179 participants completed one course Tianjiu Therapy, 77 participants completed two courses, 54 participants completed three courses, 52 participants completed four courses, 27 participants completed five courses Tianjiu Therapy, 12 participants completed six courses, there were 401 participants completed at least one course Tianjiu Therapy. Patients would be excluded for the final statistical analysis due to the incomplete data. The cause of incomplete data included incomplete treatments, during treatment period participants illness, asthma exacerbation, losing contact, pregnancy, inability to participate timely, refusing to participate, did not in Hong Kong, or incomplete ACT, questionnaire, lung function test. The participants can be included for the final analysis only when they have seven time points' data (the 1st course pre and post-assessment, the 2nd course pre and post-assessment, the 3rd course pre and post-assessment, the 4th course pre-assessment). Overall, from 2010 to 2015, patients

who received three-course Tianjiu Therapy in Sanfu Days were 91.

For the baseline characteristics of the 91 participants, the average age was 50 ± 15.26 (14 to 93) years old, 33% was male, 67% was female; the average onset age was 32.78 ± 22.99 (1 to 93) years old; and the average courses of asthma attacked was 19.98 ± 17.90 (1 to 93) (Table 2).

In baseline, in the past 12 months, the number of days patients subjected asthma-related symptoms was: 106.49 ± 142.83, and means (± SD) of FEV1 was 1.85 ± 0.94, and the mean ratio of FEV1 to forced vital capacity (FVC) was 81.68 ± 19.06. The percentage of participants had been hospitalized and admitted to A & E at least once for an asthma-related event was 22% and 15.4% respectively; the percentage of participants had been clinic visit and persistent prescription was 81.3% and 86.8% respectively; the percentage of participants had been by own medication was 13.2%; and the percentage of participants had not been processed was 9.9%; the frequency of bronchodilator never used in past 12 months was 8.9% (Table 3). For the specific twenty-three such symptoms: patients suffered: 1. wind intolerance was 27.9%; 2. susceptible to cold was 27%; 3. sneeze, running nose before onset was 22.5%; 4. onset during quarter turn was 29.3%; 5. rapid or difficult breathing was 18.4%; 6. wake up by asthma symptoms was 24.7%; 7. bluish complexion was 37.5%; 8. spontaneous sweating was 26.8%; 9. Lassitude was 9.5%; 10. lack of speech was 12%; 11. decline in physical strength was 13%; 12. reduction of exercise was 24.1%; 13. lack of strength was 28.4%; 14. lack of energy after asthma was 23.3%; 15. poor appetite was 29.2%; 16. abdomen fullness was 29.4%; 17. sloopy stool was 35%; 18. diarrhea after intake of oily food was 37.5%; 19. fear of cold was 25.7%; 20. soreness and weakness of waist and was 28.4%; 21. tinnitus was 28.6%; 22. frequent urination/night was 33.3%; 23. redness, hotness was 33.3% (Table 4).

3.1. Response to Intervention

3.1.1. The Incidence of Asthma Attack in the Past 12 Months

The incidence of asthma attack in the past 12 months declined from 29.4% in baseline to 26.1% in the 1st course, and 21.6% in the 2nd course, and 22.9% in the 3rd course. After treatment, the efficiency of acute asthma attack has significant difference among the 4 time points ($P < 0.05$) (Table 3), the 1st course was improved ($P < 0.01$), the 2nd course and the 3rd course improved significant (All $P <$

Table 2. Characteristics of Parcitipants.

Characteristic	Average
Age—year	50 ± 15.26
Gender—no. (%)	
Male	33 (36.30)
Female	68 (63.70)
Course of disease—year	19.98 ± 17.90
Onset age	32.78 ± 22.99

Table 3. Characteristics of Parcitipants.

Variable	baseline	The 1st course	The 2nd course	The 3rd course	*P* value	CI
Acute asthma attack in past year—no. (%)						
	91 (29.4)	81 (26.1)	67 (21.6)	71 (22.9)	0.000###	21.563
Days for asthma-related symptoms in last 12 months—(means ± SD)						
	106.49 ± 142.83	66.22 ± 110.68	42.49 ± 81.51	42.31 ± 88.82	0.000###	
Pulmonary function test						
	1.85 ± 0.94	1.73 ± 0.67	1.92 ± 1.51	1.80 ± 0.98	0.233	
	81.68 ± 19.06	82.76 ± 14.89	83.37 ± 14.60	79.50 ± 19.17	0.221	
Asthma-related health care in last 12 months—no. (%)						
≥1 Admit to A & E	20 (22)	10 (11)	10 (11)	6 (6.6)	0.014#	10.65
≥1 Hospitalization	14 (15.4)	7 (7.7)	4 (4.4)	3 (3.3)	0.010#	11.452
≥1 Outpatient visit	74 (81.3)	44 (48.4)	49 (54.4)	50 (55.6)	0.000###	24.264
≥1 Prescription	79 (86.8)	76 (83.5)	58 (63.7)	62 (68.1)	0.000###	18.926
≥1 By own medication	12 (13.2)	12 (13.2)	6 (6.6)	7 (7.7)	.0296#	3.700
≥1Not to be proceed	9 (9.9)	10 (11)	10 (11)	8 (8.8)	.0331#	0.954
The frequency of bronchodilator during asthma attack—no. (%)						
More than twice per day	24 (27.3)	15 (17)	12 (13.6)	37 (42)		
Once to twice per day	33 (39.3)	28 (33.3)	13 (15.5)	10 (11.9)		
Twice to three times per week	9 (47.4)	3 (15.8)	6 (31.6)	1 (5.3)	63.257	
Less than once per week	15 (26.3)	13 (22.8)	19 (33.3)	10 (17.5)		
Never	9 (8.9)	29 (28.7)	28 (37.6)	25 (24.8)		

#$P < 0.05$; ##$P < 0.01$; ###$P < 0.001$. FEV1: Forced expiratory volume in one second; V1/FVC: Forced expiratory volume in one second/forced vital capacity. [a]Accident and emergency Departments (A & E).

Table 4. The twenty-three symptoms of participants' self-evaluation.

Symptom—no. (%)			
1. wind intolerance	14 (16.3)	13. lack of strength	16 (19.8)
2. susceptible cold	13 (20.6)	14. lack of energy after asthma attack	9 (20.9)
3. sneeze\running nose before onset	16 (22.5)	15. poor appetite	7 (29.2)
4. onset during quarter	6 (8.0)	16. abdomen fullness	4 (11.8)
5. rapid or difficult breathing	33 (26.4)	17. sloopy stool	4 (10.0)
6. wake up by asthma symptoms	25 (29.4)	18. diarrhea after intake of oil food	2 (6.3)
7. bluish complexion	2 (12.5)	19. fear of cold	13 (17.6
8. spontaneous sweating	8 (19.5)	20. soreness and weakness of waist and knees	15 (20.3)
9. lassitude	13 (20.6)	21. tinnitus	10 (20.4)
10. lack of speech	7 (28.0)	22. frequent urination/night urination	6 (10.5)
11. decline in physical strength	13 (24.1)	23. redness, hotness or anxiety	7 (16.7)
12. reduction of exercise	2 (6.9)		

0.001), and improvement in the 2nd course and the 3rd course improved similarly on the incidence of asthma attack in the past 12 months ($P > 0.05$) (Figure 2, Table 5). This indicated the improvement in the 2nd course and the 3rd course were greater than the 1st course.

3.1.2. Days for Asthma Attacked in Past 12 Months

Days for asthma attacked in past 12 months showed 106.49 ± 142.83 in baseline, and declined to 66.22 ± 110.68 in the 1st course, 42.49 ± 81.51 in the 2nd course, and 42.31 ± 88.82 in the 3rd course, and there was improvement of days for asthma attacked among baseline, the 1st course, the 2nd course and the 3rd course (All $P < 0.05$) (Table 3). Compared with baseline, the 1st course was decreased with the days of asthma attacked ($P < 0.05$); the 2nd course was decreased sharply with the days of asthma attacked ($P < 0.01$); the value of the 3rd course was decreased significantly ($P < 0.001$); the 3rd course had the most improvement, but the improvements among the 1st course, the 2nd course and the 3rd course were no statistical difference (All $P > 0.05$), that means the 1st course, the 2nd course and the 3rd course had experienced similar improvement on days for asthma attacked in the past 12 months, and the 3rd course have a better improvement (Figure 3, Table 6).

3.1.3. The Rate of Western Medicine Used during Asthma Attack

After treatment, Western Medicine (bronchodilator) used during asthma attacked was: 1) decreased from 27.3% in baseline to 17% in the 1st course and 13.6% in the 2nd course, but increased to 42% in the 3rd course; 2) decreased from 39.3% in baseline to 33.3% in the 1st course, 15.5% in the 2nd course and 11.9% in the 3rd course once or twice per day; 3) decreased from 47.4% in baseline to 15.8% in the 1st course, 31.6% in the 2nd course and 5.3% in the 3rd course

Table 5. The incidence of asthma attack in the last 12 months.

Baseline & The 1st course	Baseline & The 2nd course	Baseline & The 3rd course	The 1st course & The 2nd course	The 1st course & The 3rd course	The 2nd course & The 3rd course	
−2.714[b]	−4.796[b]	−3.838[b]	−3.130[b]	−1.732[b]	−1.091[c]	*Z* value
0.007[##]	0.000[###]	0.000[###]	0.002[##]	0.083	0.275	*P* value

Noted: a. By Wilcoxon Signed Test 2 Related-Samples. b. Based on Rank. c. Based on Negative Rank. [#]$P < 0.05$; [##]$P < 0.01$; [###]$P < 0.001$.

Table 6. Days for asthma attack.

Baseline & The 1st course	Baseline & The 2nd course	Baseline & The 3rd course	The 1st course & The 2nd course	The 1st course & The 3rd course	The 2nd course & The 3rd course	
−2.15	−2.95	−3.77	−.77	−1.12	−0.11	*Z* value
0.031[#]	0.003[##]	0.000[###]	0.440	0.261	0.091	*P* value

[#]$P < 0.05$; [##]$P < 0.01$; [###]$P < 0.001$.

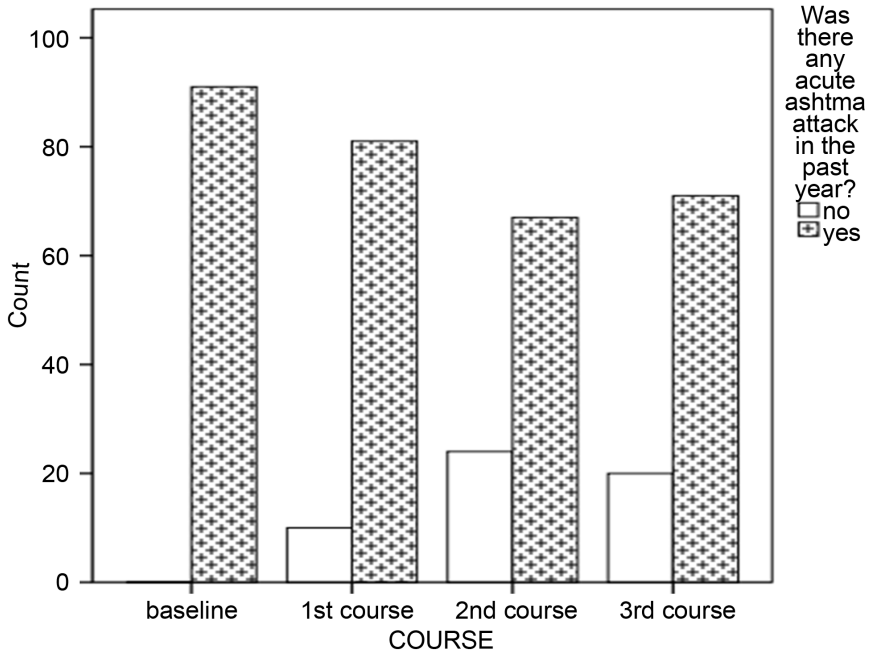

Figure 2. The incidence of asthma attack in the last 12 months.

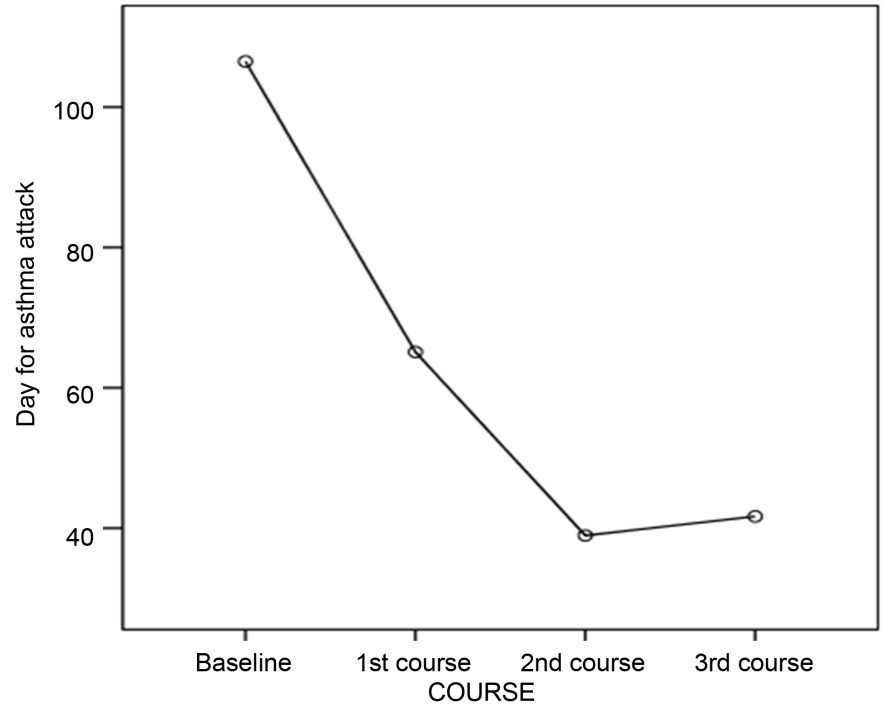

Figure 3. Days for asthma attacked in last 12 months.

twice or three times a week; 4) decreased from 26.3% in baseline to 22.8% in the 1st course, 33.3% in the 2nd course and 17.5% in the 3rd course less than once per week; 5) increased from 8.9% in baseline to 28.9% in the 1st course, 37.6% in the 2nd course and 24.8 % in the 3rd course that never happened. There was significant decrease in the rate of western medicine used by asthma participants after treatment, and significant increase in the rate of western medicine never used by

asthma participants after treatment ($P < 0.05$) (Table 3). The 1st course improved sharply ($P < 0.01$), the 2nd course improved significantly ($P < 0.001$); the 3rd course did not improved ($P > 0.05$), which indicated that the 1st course and the 2nd course both improved, but the 2nd course improved better than the 1st course ($P < 0.05$) (Figure 4, Table 7).

3.1.4. The Rate of Processing Method during Tianjiu Therapy When Asthma Attacked

Different processing method during Tianjiu therapy when asthma attacked included: 1) A & E admitting during Tianjiu therapy was 22% at baseline, and decreased to 11% at the 1st course and the 2nd course, and 6.6% at the 3rd course. Obviously, there was a great difference after any course of treatment, and the improvement have statistical difference ($P < 0.05$) (Table 3). Average of admitting to A & E was 2.69 at baseline, and decreased to 2.47 at the 1st course and the 2nd course, and decreased to 2.38 at the 3rd course, the 3rd course was sharply improved ($P < 0.01$), but there was no statistical difference between 1st course and 3rd course, 2nd course and 3rd course (All $P > 0.05$) (Table 8), which indicated although there was no statistical difference among three courses on A & E admitting during the past 12 months, there still had improvement at the 3rd course (Figure 5).

2) The result showed significant statistical difference for admit to In-patient Hospital during Tianjiu therapy among the 4 time points ($P < 0.05$) (Table 3).

Table 7. The rate of western medicine (bronchodilator) was used by asthma patients.

Baseline & The 1st course	Baseline & The 2nd course	Baseline & The 3rd course	The 1st course & The 2nd course	The 1st course & The 3rd course	The 2nd course & The 3rd course	
−3.232[b]	−5.093[b]	−1.722[b]	−2.105[b]	−1.378[c]	−3.182[c]	*Z* value
0.001[##]	0.000[###]	0.085	0.035[#]	0.168	0.001[##]	*P* value

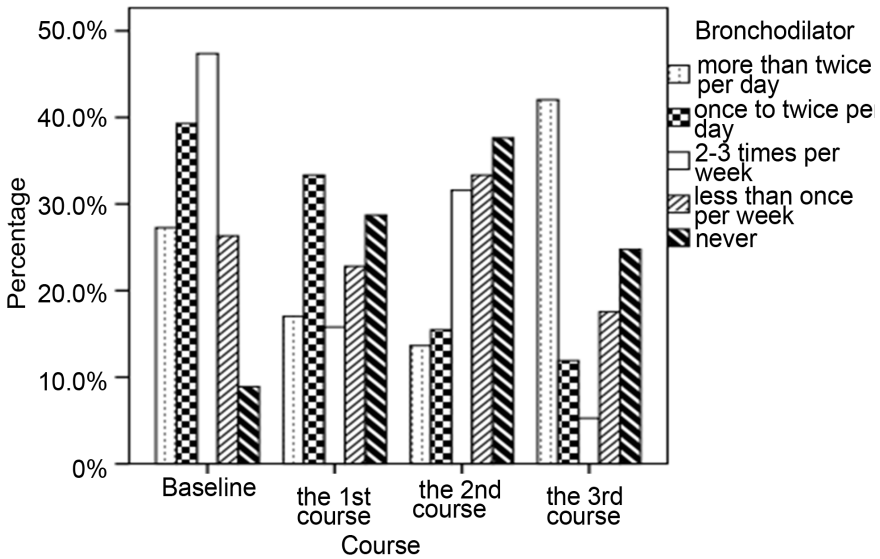

Figure 4. The rate of western medicine (bronchodilator) was used by asthma patients.

The percentage was 15.4% at baseline, it was declined to 7.7% in the 1st course ($P > 0.05$), and 4.4% in the 2nd course ($P < 0.001$), and 3.3% in the 3rd course ($P < 0.01$). Although there was no statistical difference between 2nd course and 3rd course ($P > 0.05$), it still indicated that 2nd course have a tendency of improving better than 3rd course on admitting to In-patient Hospital during Tianjiu therapy on Sanfu days (Table 8, Figure 6).

3) The frequency of admitting to Integrated Chinese medicine & Western Medicine Clinic was 81.3% at baseline, it declined to 48.4% at 1st course, that

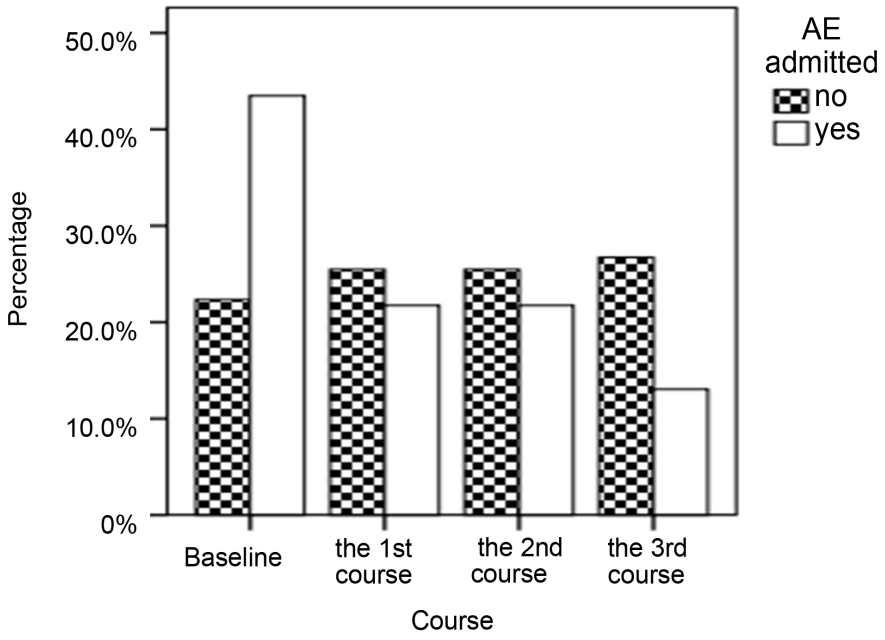

Figure 5. The frequency of admitting to A & E.

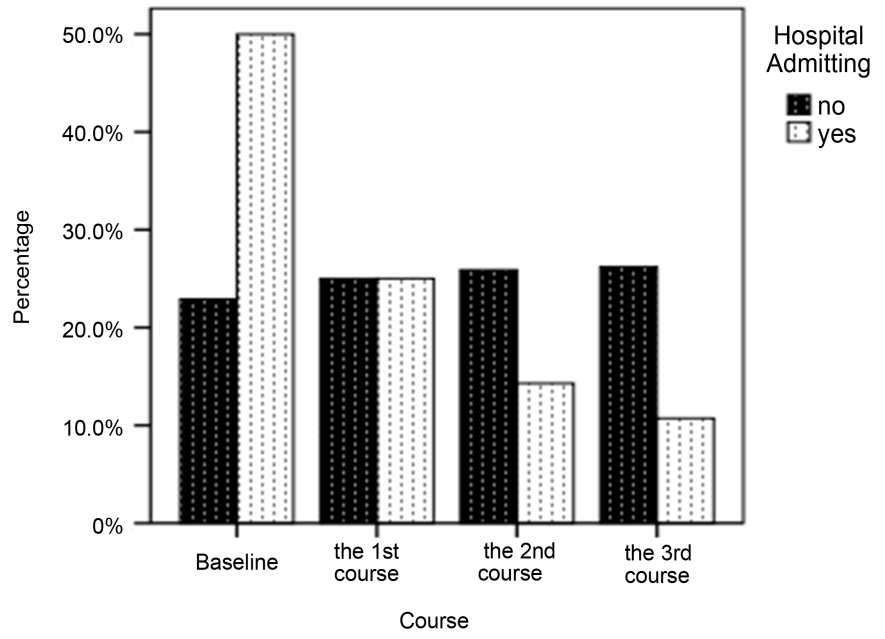

Figure 6. The frequency of admitting to hospital.

means the 1st course experienced significant improvement ($P < 0.001$); and 54.4% at 2nd course, the 2nd course experienced deeply improvement ($P < 0.01$), and 55.6% at the 3rd course, the 3rd course experienced significant improvement ($P < 0.001$) (Table 3). But there was no tatistical difference mong 1st course, 2nd course and 3rd course ($P > 0.05$). Results showed that 3 courses have similar improvements on frequency of admitting to Integrated Chinese medicine & Western Medicine Clinic, and there was similar tendency of improvement between 1st course and 3rd course (Table 8, Figure 7).

4) The percentage of solving by persistent prescription when asthma attacked was 86.8% at baseline, it was declined to 83.5 at 1st course ($P > 0.05$), 63.7% at the 2nd course, it means 2nd course experienced significant improvement ($P < 0.001$), and 68.1% at the 3rd course, it means 3rd course experienced sharply improvement ($P<0.01$), but there was no statistical difference between 2nd course and 3rd course on solving by persistent when asthma attack ($P > 0.05$) (Table 8), which indicated that at 2nd course have a better improvement on solving by persistent prescription when asthma attacked (Figure 8).

3.1.5. Times of Different Processing Method during Tianjiu Therapy When Asthma Attacked

1) Times for admitting to clinic was 18.88 ± 48.404 at baseline, it was decreased to 4.15 ± 12.205 at 1st course ($P < 0.001$), 5.03 ± 15.093 at 2nd course ($P < 0.001$), and 0.57 ± 0.519 at 3rd course ($P < 0.001$), which means that there was significant improvement on times for admitting to clinic (Table 8), and the improvements were similar among 1st course, 2nd course and 3rd course (All $P > 0.05$) (Table 8, Figure 9).

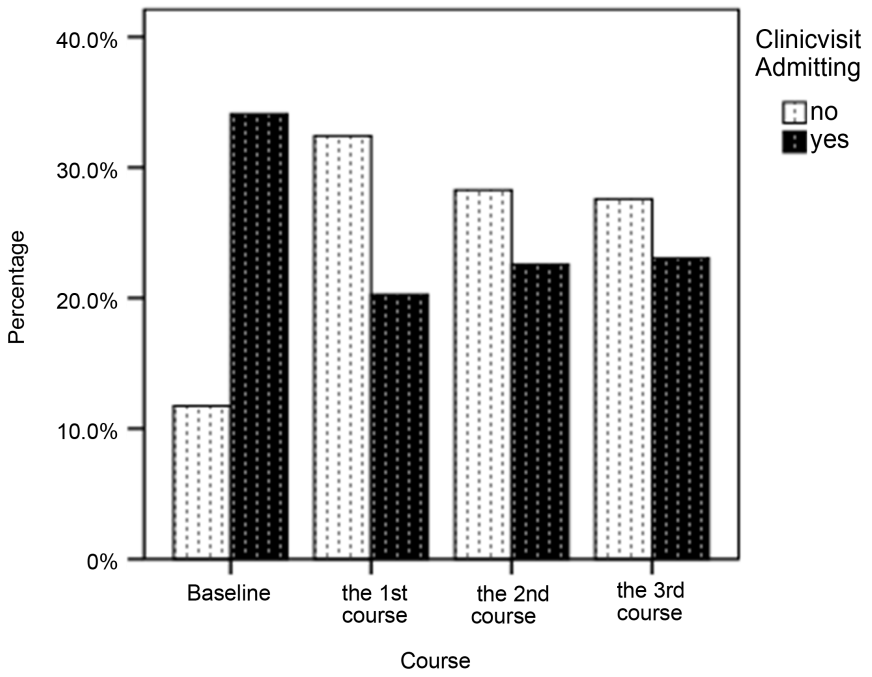

Figure 7. The frequency of admitting to Integrated Chinese Medicine & Western Medicine Clinic.

Table 8. Analyze health care of each two courses when asthma attacked.

	Baseline & 1st course	Baseline & 2nd course	Baseline & 3rd course	1st course & 2nd course	1st course & 3rd course	2nd course & 3rd course	
Admit to A & E	−2.041[d]	−2.041[d]	−2.985[b]	0.000[c]	−1.069[d]	−1.155[b]	*Z* value
	0.41	0.41	0.003[##]	1.000	0.285	0.248	*P* value
Admit to hospital	−1.698[b]	−7.500[c]	−3.051[b]	−1.000[b]	−1.265[b]	−0.447[b]	*Z* value
	0.090	0.000[###]	0.002[##]	0.317	0.206	0.655	*P* value
Admit to clinic	−4.423[b]	−3.429[b]	−3.773[b]	−1.121[c]	−1.333[c]	−0.169[c]	*Z* value
	0.000[###]	0.001[##]	0.000[###]	0.262	0.182	0.886	*P* value
Solve by persistent medication	−0.600[b]	−3.550[b]	−3.053[b]	−3.182[b]	−2.475[b]	−0.649[c]	*Z* value
	0.549	0.000[###]	0.002[##]	0.001[##]	0.013[#]	0.516	*P* value
Times of admitting to clinic	−3.781[b]	−4.158[b]	−4.211[b]	−0.028[b]	−0.543[c]	−1.432[c]	*Z* value
	0.000	0.000	0.000	0.978	0.587	0.152	*P* value
Times of solving by persistent medicine	−4.526[b]	−4.435[b]	−5.162[b]	−0.304[b]	−4.435[b]	−0.65[c]	*Z* value
	0.000	0.000	0.000	0.761	0.000	0.948	*P* value
Times by own medication	−3.141[b]	−3.935[b]	−4.226[b]	−8.69[b]	−3.935[b]	−0.347[b]	*Z* value
	0.001	0.000	0.000	0.385	0.000	0.729	*P* value

Noted: a. Wilcoxon Signed-rank test. b. based on rank. c. based on negative rank.

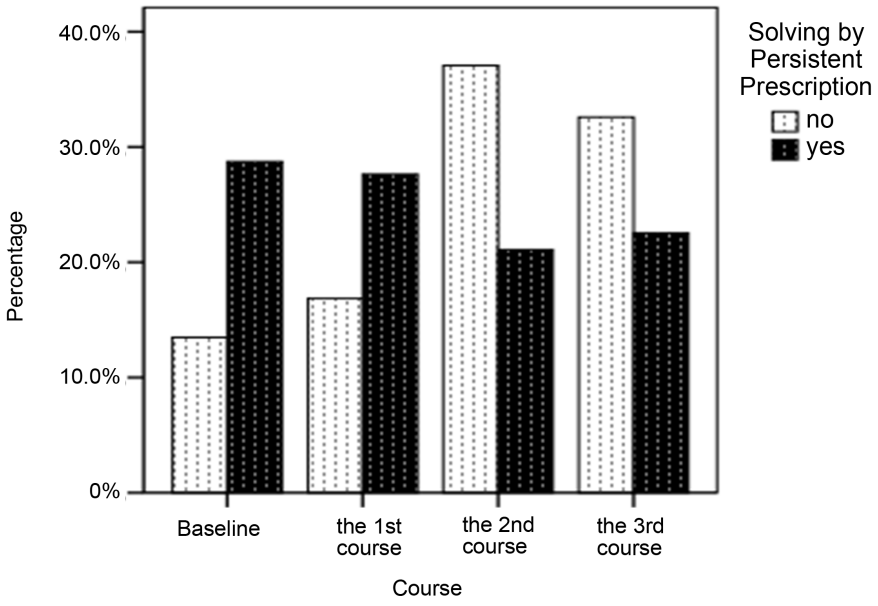

Figure 8. The frequency of solving by persistent prescription.

2) Times for persistent prescription when asthma attacked was 130.03 ± 93.349 at baseline, it was decreased to 47.63 ± 103.014 at 1st course, 64.08 ± 175.212 at 2nd course, and 16.86 ± 93.963 at 3rd course, which means that there were significant statistical differences (All $P < 0.05$) (Table 9), but without any

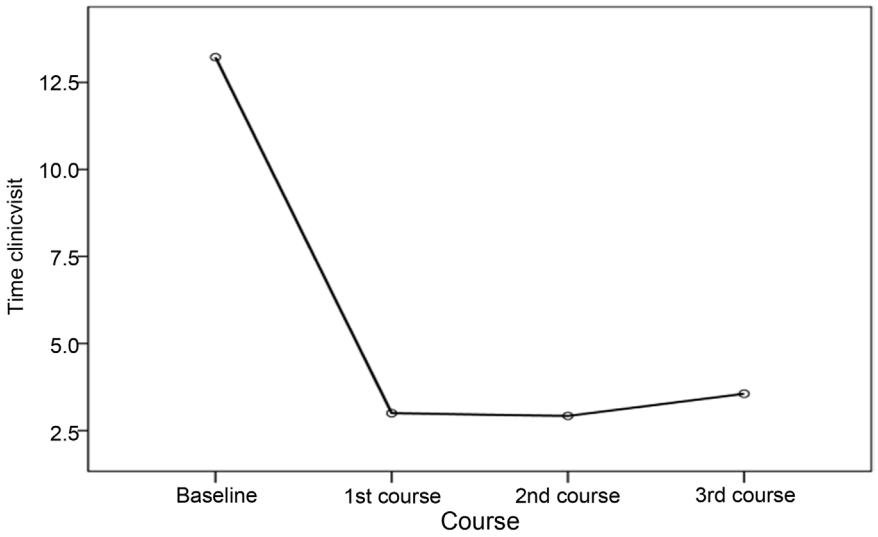

Figure 9. Times for admitting to hospital.

Table 9. Analyze health care of all courses when asthma attacked.

Variable (Average/Mean ± SD)	baseline	The 1st course	The 2nd course	The 3rd course	*P* value
Times to A & E	0.51 ± 1.23	0.18 ± 0.53	1.24 ± 10.38	0.07 ± 0.25	0.339
Times to hospital	1.41 ± 10.40	0.11 ± 0.41	0.09 ± 0.49	0.04 ± 0.21	0.227
Times to clinic	18.88 ± 48.40	4.15 ± 12.20	5.03 ± 15.09	0.57 ± 0.52	0.002##
Times to persistent	130.03 ± 93.35	47.63 ± 103.01	64.08 ± 175.21	16.86 ± 93.95	0.001##
Times by own medicine	20.57 ± 39.46	4.63 ± 20.37	2.40 ± 14.59	1.42 ± 10.48	0.000###
Times of not proceed	9.84 ± 43.96	14.60 ± 115.44	3.31 ± 19.46	1.29 ± 10.38	0.386

statistical difference among 1st course, 2nd course and 3rd course ($P > 0.05$) (Table 9), which means the 1st course, the 2nd course, the 3rd course experienced similar improvements on times for persistent prescription after Tianjiu therapy on San-fu days (Figure 10).

3) Times of solving by own medication was 20.57 ± 39.456 at baseline, it was decreased to 4.63 ± 20.372 at 1st course ($P < 0.01$), which indicated that the 1st course experienced sharply improvement; 2.40 ± 14.594 at 2nd course ($P < 0.001$), and 1.42 ± 10.483 at 3rd course ($P < 0.001$), which indicated that 2nd course and 3rd course experienced significant improvement (Table 9), but there were no statistical difference between 2nd course and 3rd course ($P > 0.05$) (Table 9), that means 2nd course and 3rd course experienced similar improvement on the times of solving by own medication (Figure 11).

3.1.6. The Percentage of Treatments Received When Asthma Attacked

1) The rate of receiving Chinese Herbal Medicine when asthma attacked was 34% at baseline, and it was decreased to 24.2% at 1st course ($P > 0.05$), 15.2% at 2nd course ($P < 0.001$), and 23.1% at 3rd course ($P < 0.01$) (Table 10, Figure 13). Which indicated that 1st course had no improvement compared with baseline,

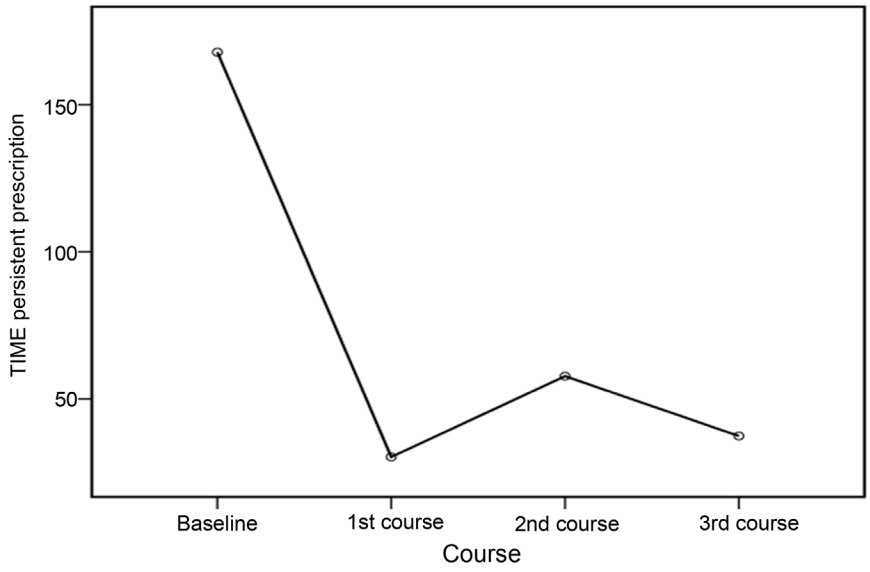

Figure 10. Times for persistent prescription.

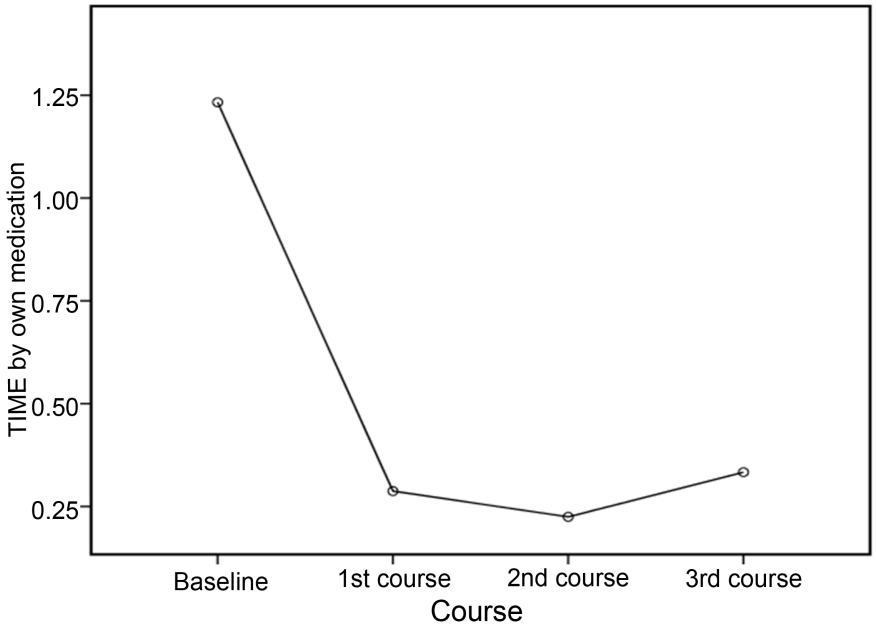

Figure 11. Times for times by own medication.

the 2nd course experienced sharply improvement, and 3rd course experienced significant improvement compared with baseline, but there was no statistical difference between 2nd course and 3rd course ($P > 0.05$) (Table 10), which means that the 2nd course and the 3rd course have experienced similar significant improvement of the rate of receiving Chinese Herbal Medicine when asthma attacked, but 2nd course experienced a better improvement tendency than 3rd course (Figure 12).

2) The rate of other treatments was 8.8% at baseline, and it was increased to 30.8% at 1st course ($P < 0.01$), 39.1% at 2nd course ($P < 0.001$), and 16.5% at 3rd course ($P > 0.05$) (Table 10), which indicated participants increased to accept

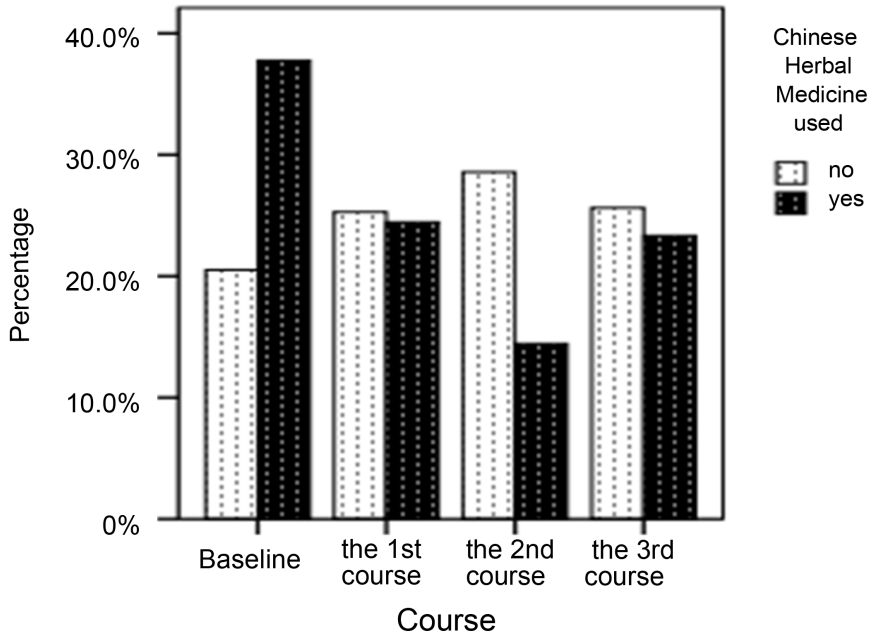

Figure 12. The rate of Chinese Herb Medicine.

Table 10. The percentage of treatments received other than Western Medicine for asthma.

—no. (%)	Baseline	The 1st course	The 2nd course	The 3rd course	*P* value	X^2
Any treatments other than Western Medicine	42 (46.2)	38 (41.8)	38 (41.3)	30 (33)	0.305	3.62
Chinese Herb Medicine	34 (37.4)	22 (24.2)	14 (15.2)	21 (23.1)	0.003##	13.69
Acupuncture & Moxibustion	14 (15.4)	9 (9.9)	7 (7.6)	11 (12.1)	0.385	3.05
Others	8 (8.8)	28 (30.8)	36 (39.1)	15 (16.5)	0.000###	24.48

other treatment at 1st course and 2nd course, there was no statistical difference at 3rd course compared with baseline ($P > 0.05$) (Table 10, Table 11, Figure 13).

3.1.7. The Percentage of Asthma under Controlled

The percentage of asthma participants under controlled was 11.9% at baseline, it was increased to 18.1% at 1st course ($P > 0.05$), 35.2% at 2nd course ($P < 0.001$), and 34.8% at 3rd course ($P < 0.001$) (Table 12). There were significant statistical differences between 1st course and 2nd course, 1st course and 3rd course (All $P < 0.05$), There was no significant statistical difference between 2nd course and 3rd course ($P > 0.05$) (Table 12, Table13). The results indicated that 2nd course and 3rd course experienced similarly percentages of asthma under controlled (Figure 14).

3.1.8. The Percentage of Asthma Have No Improvement after Tianjiu Therapy

The percentage of asthma participants experienced no improvement was 38.6%

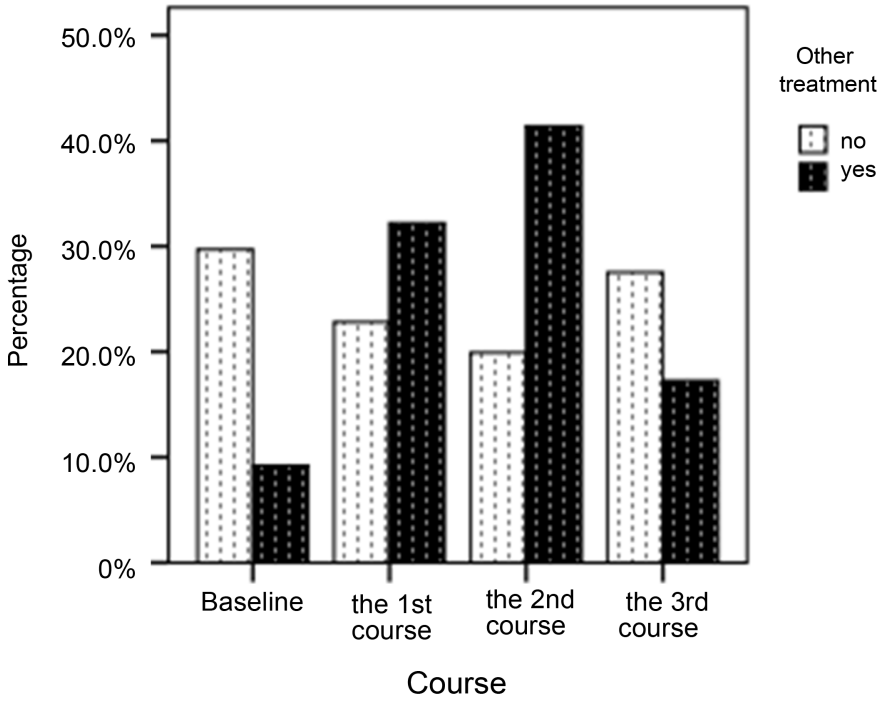

Figure 13. Other treatments than western medicine and Chinese Medicine and acupuncture & moxibustion.

Table 11. Treatments received when asthma attack by Wilcoxon Signed Test 2 Related-Samples.

	Baseline & The 1st course	Baseline & The 2nd course	Baseline & The 3rd course	The 1st course & The 2nd course	The 1st course & The 3rd course	The 2nd course & 3rd course	
Chinese herbal	−2.175[b]	−3.781[b]	−2.694[b]	−2.065[b]	−1.92[b]	−1.886[c]	*Z* value
Medicine	0.13	0.000[###]	0.007[##]	0.039[#]	0.847	0.059	*P* value
Other	−3.182[c]	−3.920[c]	−8.16[c]	−1.155[c]	−2.030[b]	−3.550[b]	*Z* value
treatments	0.001[##]	0.000[###]	0.414	0.248	0.040[#]	0.000[###]	*P* value

Noted: a. By Wilcoxon Signed Test 2 Related-Samples. b. based on rank. c. based on negative rank.

Table 12. The percentage of asthma is under controlled and no improvement of 3 courses and baseline.

—no. (%)	Baseline	The 1st course	The 2nd course	The 3rd course	*P* value	X^2
Asthma is under controlled	25 (11.9)	38 (18.1)	74 (35.2)	73 (34.8)	0.000	83.245
No improvement	27 (38.6)	19 (27.1)	11 (15.7)	13 (18.6)	0.012	10.966

at baseline, it was decreased to 21.7% at 1st course, 15.7% at 2nd course, and 18.6% at 3rd course, and the decline of four time points has a statistical difference ($P < 0.05$) (Table 13). There was no improvement compare 1st course with baseline ($P > 0.05$). There were significant statistical difference on improvement between 2nd course and baseline, 3rd course and baseline ($P < 0.01$), There was no

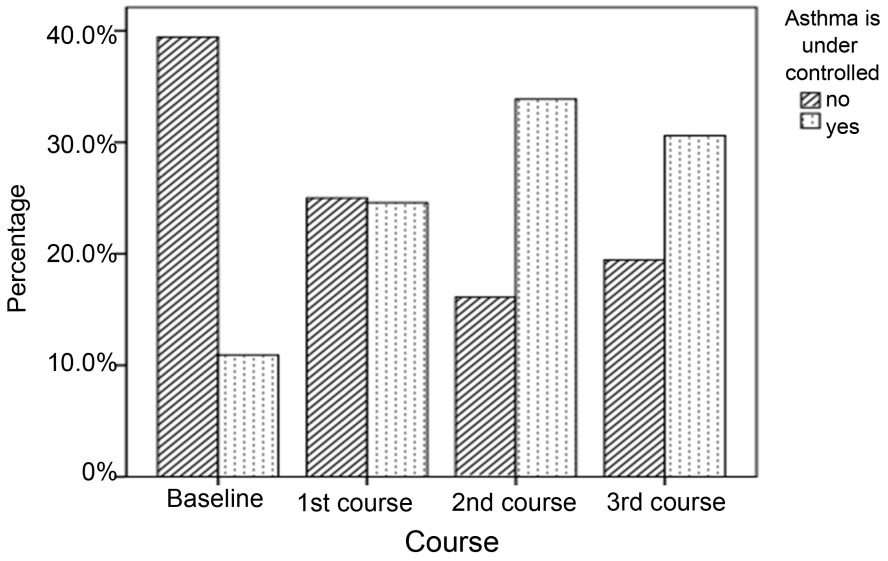

Figure 14. The percentage of asthma under controlled.

Table 13. The percentage of asthma is under controlled by Wilcoxon Signed Test 2 Related-Samples.

	Baseline & the 1st course	Baseline & the 2nd course	Baseline & the 3rd course	The 1st course & the 2nd course	The 1st course & the 3rd course	The 2nd course & the 3rd course	
No improvement	−1.414[b]	−2.828[b]	−2.858[b]	−1.633[b]	−1.279[b]	−4.71[c]	*P* value
	0.157	0.005	0.004	0.102	0.201	0.637	*Z* value
Under controlled	−1.857[b]	−6.607[b]	−6.532[b]	−5.427[b]	−5.105[b]	−0.200[c]	*P* value
	0.063	0.000	0.000	0.000	0.000	0.841	*Z* value

Noted: a. Wilcoxon Signed-rank test. b. based on rank. c. based on negative rank.

improvement compare 2nd course with 3rd course ($P > 0.05$) (Table 12, Table 13). The results indicated that the percentage of asthma have no improvement in the 2nd course and the 3rd course (Figure 15).

3.1.9. The rate of Twenty-three Symptoms during Tianjiu Therapy

1) Percentage of rapid or difficult breathing was 32.4% at baseline, it was decreased to 18.8% at 1st course, 25.8% at 2nd course, 23.0% at 3rd course, there were statistical difference among the baseline and the 3 courses ($P < 0.05$) (Table 14). 1st course improved significantly ($P < 0.001$), 2nd course sharply ($P < 0.01$), and 3rd course improved ($P < 0.05$), the 2nd course and the 3rd course similar improvement in the statistical ($P > 0.05$), that was to say the 1st course has best improvement in the percentage of rapid or difficult breathing during Tianjiu Therapy (Table 15, Figure 16).

2) The percentage of wake up by asthma symptoms was 39.5% at baseline, it was decreased to 17.5% at 1st course, 22.0% at 2nd course, 20.9% at 3rd course, the proportions of 3 courses after treatment reduced significantly compared with baseline ($P < 0.05$) (Table 14). The percentages of the 1st course, the 2nd course, and the 3rd course were all improved significantly with baseline (All $P < 0.001$),

Table 14. The participants' symptoms scale of 3 courses.

Symptoms scale	Baseline	The 1st course	The 2nd course	The 3rd course	*P* value
Detail symptoms—no. (%)					
1 Wind intolerance	38 (25.3)	29 (19.3)	41 (27.3)	42 (28.0)	0.19
2 Susceptible cold	43 (31.9)	26 (19.5)	32 (23.7)	34 (25.2)	0.072
3 Sneeze\running nose before onset	47 (26.3)	38 (21.2)	42 (23.5)	52 (29.1)	0.182
4 Onset during quarter	58 (25.6)	49 (21.6)	64 (28.2)	56 (24.7)	0.146
5 Rapid or difficult breathing	69 (32.4)	40 (18.8)	55 (25.8)	49 (23.0)	0.000
6 Wake up by asthma symptoms	70 (39.5)	31 (17.5)	39 (22.0)	37 (20.9)	0.000
7 Bluish complexion	13 (31.0)	7 (16.7)	9 (21.4)	13 (31.0)	0.406
8 Spontaneous sweating	27 (32.9)	10 (12.2)	23 (28.0)	22 (26.8)	0.017
9 Lassitude	53 (38.7)	25 (18.2)	26 (19.0)	33 (24.1)	0.000
10 Lack of speech	27 (34.2)	16 (20.3)	18 (22.8)	18 (22.8)	0.195
11 Decline in physical strength	39 (29.8)	26 (19.8)	29 (22.1)	37 (28.2)	0.135
12 Reduction of exercise	19 (26.0)	8 (11.0)	24 (32.9)	22 (30.1)	0.015
13 Lack of strength	58 (33.7)	37 (21.5)	36 (20.9)	41 (23.8)	0.003
14 Lack of energy after asthma attack	25 (26.9)	15 (16.1)	26 (28.0)	27 (29.0)	0.147
15 Poor appetite	15 (29.4)	10 (19.6)	13 (25.5)	13 (25.5)	0.762
16 Abdomen fullness	21 (24.1)	16 (18.4)	26 (29.9)	24 (27.6)	0.33
17 Sloopy stool	15 (20.8)	15 (20.8)	21 (29.2)	21 (29.2)	0.477
18 Diarrhea after intake of oil food	10 (13.5)	16 (21.6)	21 (28.4)	27 (36.5)	0.014
19 Fear of cold	38 (25.3)	34 (22.7)	37 (24.7)	41 (27.3)	0.769
20 Soreness and weakness of waist and knees	48 (25.7)	41 (21.9)	53 (28.3)	45 (24.1)	0.337
21 Tinnitus	31 (29.2)	25 (23.6)	27 (25.5)	23 (21.7)	0.623
22 Frequent urination/night urination	30 (26.5)	21 (18.6)	35 (31.0)	27 (23.9)	0.153
23 Redness, hotness or anxiety	24 (25.0)	18 (18.8)	27 (28.1)	27 (28.1)	0.383

but the improvements among 1st course, 2nd course and the 3rd course were similar ($P > 0.05$) (Table 15, Figure 17).

3) The percentage of spontaneous sweating was 32.9% at baseline, it was declined to 12.2% at 1st course, 28.0% at 2nd course, 26.8% at 3rd course, the proportion of 3 courses after treatment compared with baseline showed reduce significantly ($P < 0.05$) (Table 14). The percentage of 1st course was statistically different compared with baseline ($P < 0.001$), there were no improvement compare 2nd course and 3rd course with baseline (All $P > 0.05$) (Table 15), which indicated that the 1st course has improved the symptoms of spontaneous sweating (Figure 18).

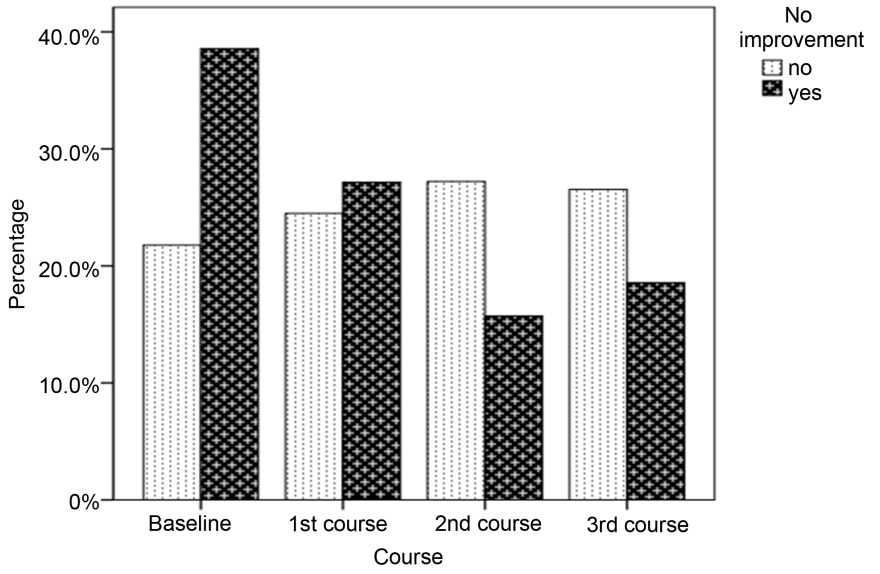

Figure 15. The percentages of asthma have no improvement.

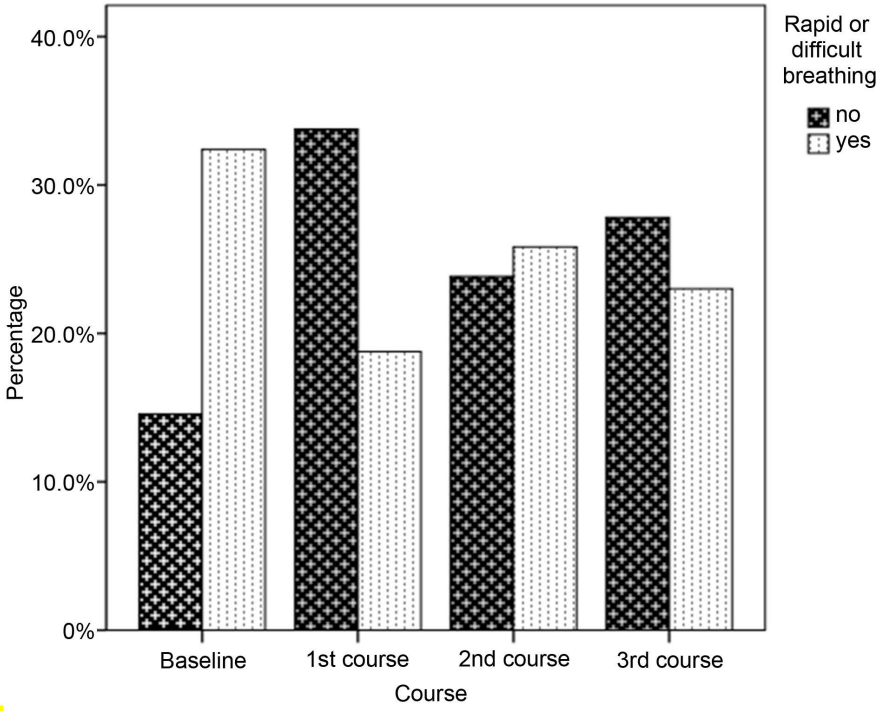

Figure 16. The percentage of rapid or difficult breathing during Tianjiu Therapy.

4) The percentage of lassitude was 38.7% at baseline, decreased to 18.2% at 1st course, 19.0% at 2nd course, 24.1% at 3rd course, the proportion of 3 courses compared with baseline were significantly reduced ($P < 0.05$) (Table 14). The 1st course and the 2nd course improved significantly (All $P < 0.001$), and the 3rd course improved sharply ($P < 0.01$), there were no statistical difference among 1st course, 2nd course and 3rd course ($P > 0.05$) (Table 15), which indicated that 1st course, 2nd course and 3rd course have similar improvements with symptoms of lassitude, but 1st course and 2nd course have a better improvement tendency than

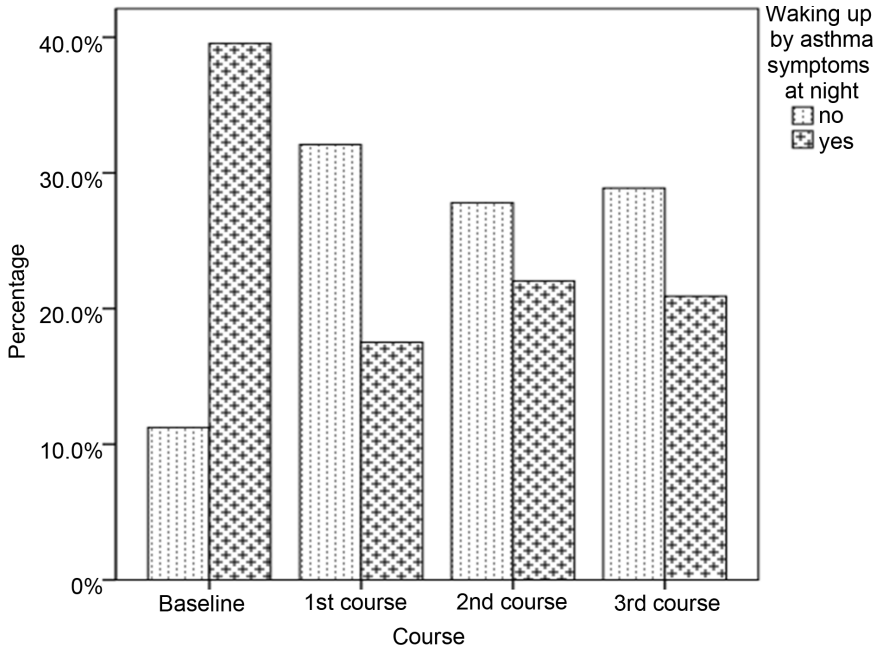

Figure 17. The percentage of waking up by asthma.

Table 15. Twenty-three clinic symptoms of Chinese Medicine.

	Baseline & the 1st course	Baseline & the 2nd course	Baseline & the 3rd course	The 1st course & the 2nd course	The 1st course & the 3rd course	The 2nd course & the 3rd course	
Rapid or difficult breathing	−4.143[b]	−2.160[b]	−3.015[b]	−2.402[c]	−1.521[c]	−1.061[b]	*Z* value
	0.000[###]	0.031[#]	0.003[##]	0.016[#]	0.128	0.289	*P* value
Wake up by asthma symptoms	−5.571[b]	−4.522[b]	−5.032[b]	−1.333[b]	−1.029[c]	−0.408[b]	*Z* value
	0.000[###]	0.000[###]	0.000[###]	0.182	0.303	0.683	*P* value
Spontaneous sweating	−3.545[b]	−0.853[b]	−1.000[b]	−2.711[c]	−2.588[c]	−0.200[b]	*Z* value
	0.000[###]	0.394	0.317	0.007[##]	0.011[#]	0.841	*P* value
Lassitude	−4.320[b]	−4.025[b]	−3.244[b]	−1.92[c]	−1.461[c]	−1.135[c]	*Z* value
	0.000[###]	0.000[###]	0.001[##]	0.847	0.144	0.178	*P* value
Reduce of exercise	−2.294[b]	−0.898[c]	−0.539[c]	−3.266[c]	−2.746[c]	−0.343[b]	*Z* value
	0.022[#]	0.369	0.59	0.001[##]	0.006[##]	0.732	*P* value
Lack of strength	−3.452[b]	−3.667[b]	−2.874[b]	−0.200[b]	−0.707[c]	−0.898[c]	*Z* value
	0.001[##]	0.000[###]	0.004[##]	0.841	0.48	0.369	*P* value
Diarrhea after intake of oily food	−1.342[b]	−2.200[b]	−3.545[b]	−1.147[b]	−2.200[b]	−1.225[b]	*Z* value
	0.18	0.028[#]	0.000[###]	0.251	0.028[#]	0.221	*P* value

Noted: a. Wilcoxon Signed-rank test. b. base on rank. c. base on negative rank.

3rd course (Figure 19).

5) The percentage of reduction of exercise was decreased from 26.0% at baseline to 11.0% at 1st course, and increased to 32.9% at 2nd course, 30.1% at 3rd

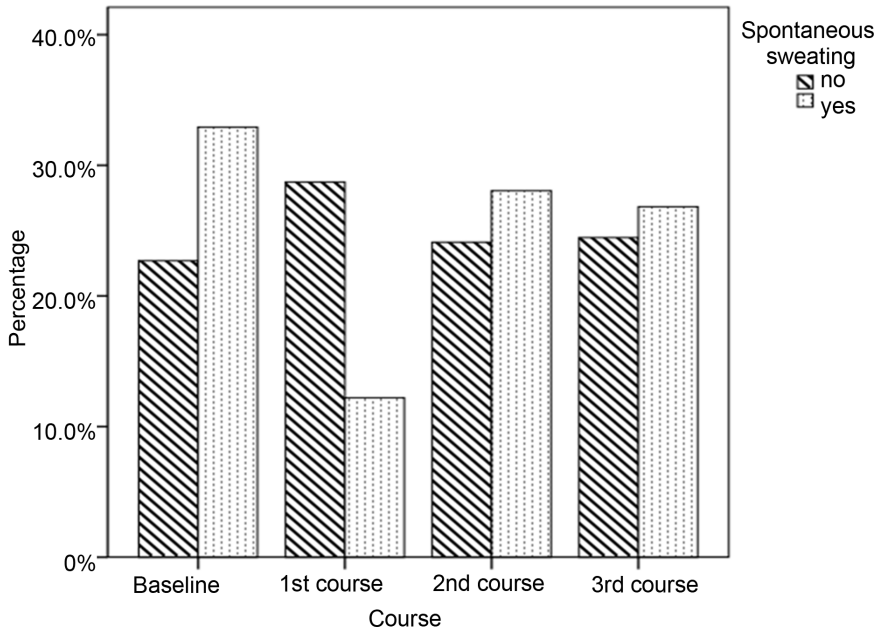

Figure 18. The percentage of spontaneous sweating.

course (**Table 14**). There were no improvement compared 2nd course and 3rd course with baseline ($P > 0.05$), but the percentage of the 1st course improved ($P < 0.05$), which indicated the 1st course have improved the symptoms of reduction of exercise (**Table 15**, **Figure 20**).

6) The percentage of lack of strength was declined from 33.7% at baseline to 21.5% at 1st course, 20.9% at 2nd course, 23.8% at 3rd course, the proportions of 4 time points were statistical difference ($P < 0.05$) (**Table 14**). The improvements of 1st course and 3rd course were sharply (All $P < 0.01$), 2nd course was significantly ($P < 0.001$), there were no statistical difference among 1st course, 2nd course and the 3rd course ($P > 0.05$), which means the improvements of 1st course, 2nd course and 3rd course for symptoms of participants suffering from lack of strength were similar, and 2nd course have a better improvement tendency (**Table 15**, **Figure 21**).

7) The percentage of diarrhea after intake of oil food was 13.5% at baseline, it was increased to 21.6% at the 1st course, 28.4% at the 2nd course, 36.5% at the 3rd course, the improvements with proportion have statistical difference (All $P < 0.05$) (**Table 14**). The percentages of the 2nd course and the 3rd course were statistically increased compared with baseline (All $P < 0.05$), there was no statistical difference compared baseline with the 1st course ($P > 0.05$), which means the 2nd course and the 3rd course have a little worse in symptoms of participants suffering from diarrhea after intake of oil food. (**Table 15**, **Figure 22**).

3.1.10. Results of Lung function

Average of FEV1 was 1.85 ± 0.94 at baseline, it was decreased to 1.73 ± 0.64 at 1st course, 1.73 ± 0.64 at 2nd course, increased to 1.92 ± 1.51 at 3rd course (All $P > 0.05$) (**Table 3**), which indicated there was no significant statistical improvement

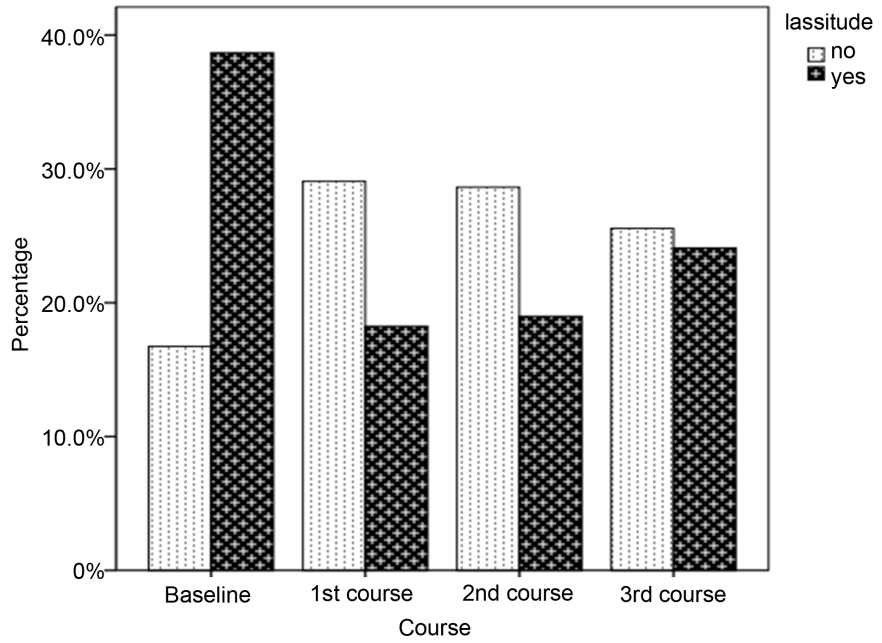

Figure 19. The percentage of participants suffered from lassitude.

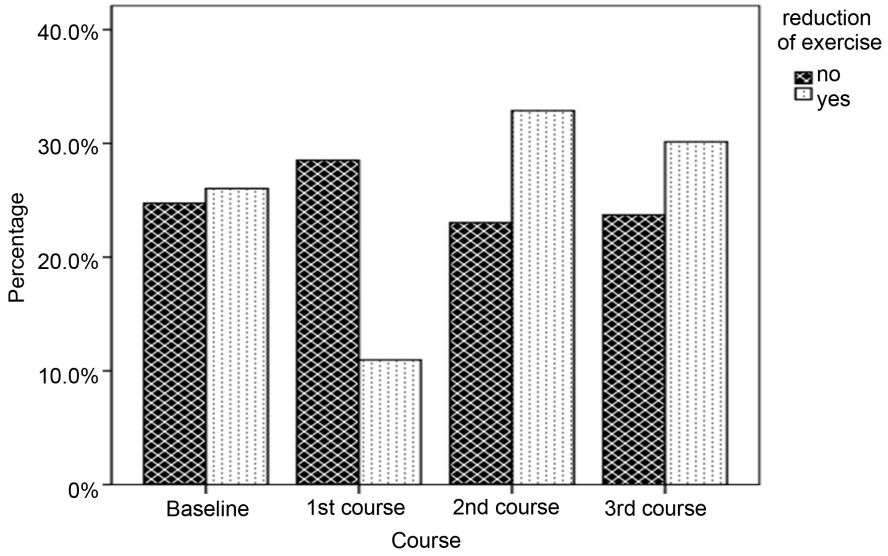

Figure 20. The proportion of participants suffered from reduction of exercise.

after any course of FEV1 for asthma participants; The percentage of FEV1/FVC(×100) was 81.68 ± 19.06 in baseline, there were increased to 82.76 ± 14.89 at 1st course, 83.37 ± 14.6 at 2nd course, and declined to 79.50 ± 19.17 at 3rd course (All $P > 0.05$) (Table 3). That means after 3 courses of Tianjiu therapy, there was no significant statistical improvement of FEV1/FVC for participants.

3.1.11. Results of ACT

The average total scores of participants was 19.55 ± 4.87 at baseline, and increased to 20.55 ± 1.37 at 1st course, 20.91 ± 3.48 at 2nd course, and 21.00 ± 2.93 at 3rd course, there was no statistical difference among the results (All $P > 0.05$)

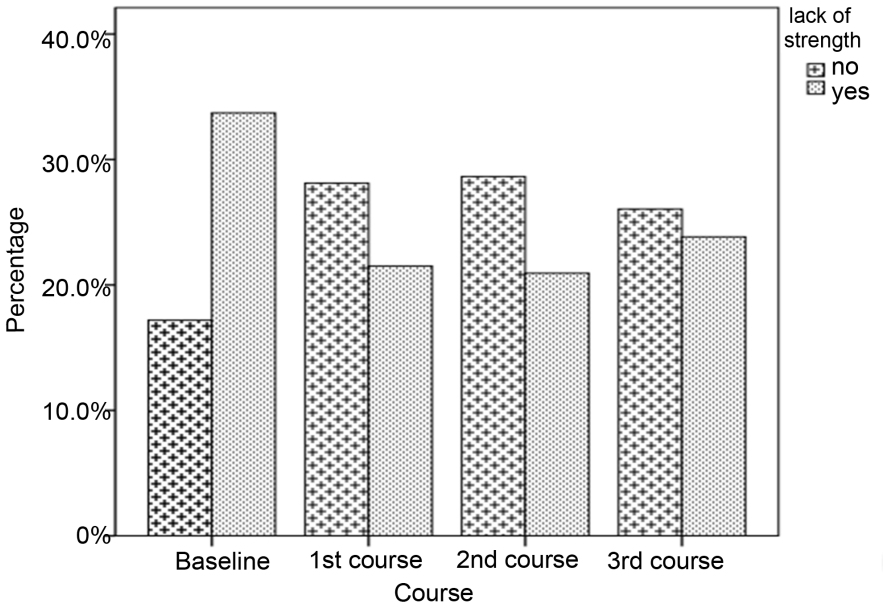

Figure 21. The proportion of participants suffered from lack of strength.

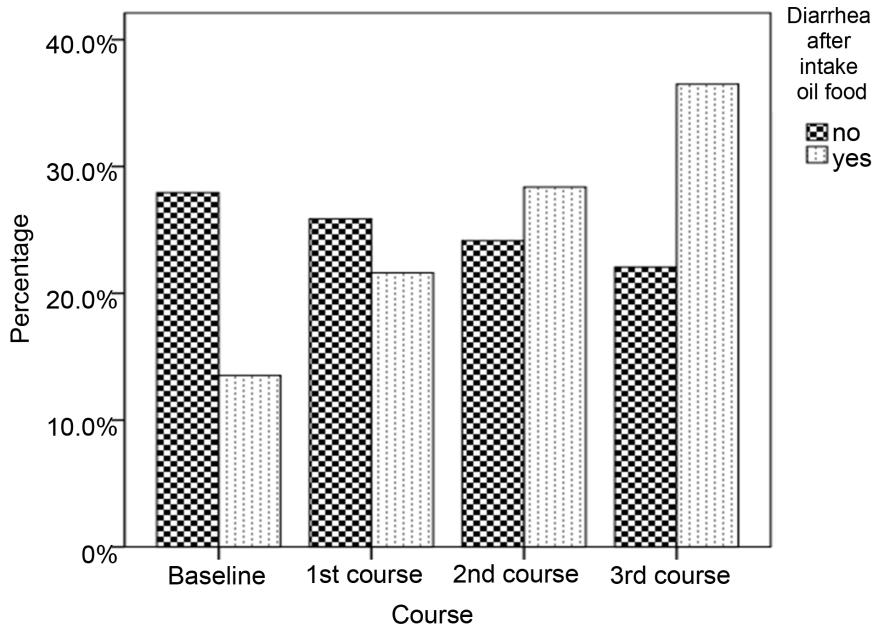

Figure 22. The proportion of participants suffered from Diarrhea after intake of oil food.

(Table 16), which means that there was no significant improvement for the 5 symptoms.

4. Discussion

In the first previous study (HKCTR-1128), Tianjiu Therapy has shown substantial improvements in the medication need after treatment, included the number of symptoms which frequency appeared in asthma patients, and the number of days with asthma-related symptoms. There was nothing different between Tianjiu Therapy group and placebo group after the 3rd treatment immediately, but

Table 16. Efficacy observation on Tianjiu therapy for asthma.

No. (%)	Baseline	The 1st course	The 2nd course	The 3rd course	*P* value
Q1:In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or at home?					
All the time	0	2	1.1	1.1	
Most of the time	18.2	4.1	4.1	4.4	
Some of the time	0	8.2	8.2	9.9	0.62
A little of the time	9.1	8.2	8.2	12.1	
None of the time	72.7	77.6	77.6	72.5	
Q2: During the past 4 weeks, how often have you had shortness of the breath?					
All the time	9.1	6.1	3.3	7.7	
Most of the time	18.2	16.3	11	8.8	
Some of the time	9.1	10.2	13.2	9.9	0.80
A little of the time	18.2	20.4	34.1	27.5	
None of the time	45.5	46.9	38.5	46.2	
Q3: During the past 4 weeks, how often did you asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?					
All the time	0	8.2	4.4	13.2	
Most of the time	18.2	4.1	7.7	5.5	
Some of the time	9.1	8.2	12.1	6.6	0.56
A little of the time	9.1	20.4	17.6	16.5	
None of the time	63.6	59.2	58.2	58.2	
Q4: During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?					
All the time	9.1	8.2	11	11	
Most of the time	18.1	30.6	15.4	23.1	
Some of the time	9.1	2	6.6	9.9	0.72
A little of the time	18.2	14.3	16.5	9.9	
None of the time	45.5	44.9	50.5	46.2	
Q5: How would you rate your asthma control during the past 4 weeks?					
All the time	0	0	2.2	1.1	
Most of the time	9.1	6.1	6.6	7.7	0.83
Some of the time	36.4	18.4	26.4	24.2	
A little of the time	45.5	49	46.7	53.8	
None of the time	9.1	26.5	18.7	13.2	
Total: The average total scores of 5 questions above.					
	19.55 ± 4.87	21.55 ± 1.37	20.91 ± 3.48	21.00 ± 2.93	0.427

the effect of Tianjiu Therapy has increasing trend than placebo group in the four-time followup; In the second previous study, it had proved that both 2-course Tianjiu Therapy and one-course Tianjiu Therapy significantly reduced the number of symptoms which frequently appeared in asthma patients and medication need in participants with chronic asthma as compared with baseline. The 2nd course Tianjiu Therapy was less sensitive than the first course Tianjiu Therapy for chronic asthma, however, the second course treatment still plays a role in solidating the curative effect of Tianjiu Therapy in the treatment of asthma. Therefore, this study aimed to explore the efficiency if would get better as the courses get longer for asthma patients of Tianjiu Therapy in Sanfu days and tried to explore the optimal efficiency course. As a result, participants with asthma who received Tianjiu therapy in Sanfu days have improved with the days for asthma attack, asthma related process when asthma attacked including Inter-grated Chinese medicine and Western Medicine Clinic admitted, times of Inter-grated Chinese medicine and Western Medicine Clinic admitted, times of solving by own medicine and persistent medicine, and the symptom of waking up by asthma symptoms, lassitude, lacking of strength similarly in 3 courses compared with no treatment (All $P < 0.05$), these results showed that as the course get longer, the efficiency did not become better, instead, efficiency kept a stable status; the frequency of asthma attacked was much more improved in the 2nd course and the 3rd course than in the 1st course (All $P < 0.05$), it means the efficiency kept a stable improvement in the 2nd course and the 3rd course; in some results like admitted to the hospital, solved by persistent medication when asthma attack, the frequency of Chinese herbal medicine, and asthma was under controlled were improved in the 2nd course and the 3rd course; in some results like admitted to A & E, other treatment except bronchodilator and Chinese medicine and Western Medicine were improved in the 3rd course; and the frequency of bronchodilator used was improved better in the 2nd course than the 1st course ($P < 0.05$). All above showed that as the course get longer, more symptoms were improved. And because the time points were chosen 1 year after Tianjiu Therapy, it proved that the efficiency was last for almost 1 year. But the symptoms of spleen-qi-deficient included spontaneous sweating, reduce of exercise, diarrhea after intake of oily food were not improved as the course get longer. One of lung-qi-deficient symptoms like rapid or difficult breathing was improved better in the 1st course than in the 2nd course and the 3rd course. The last but not the least, no changes occurred in pulmonary function and ACT for 3 course compared with baseline, but have increasing trend in total score for ACT.

5. Conclusion

From the result of this study, although the symptoms of spleen-qi-deficient including spontaneous sweating, reduce of exercise, diarrhea after intake of oily food were not improved as the course get longer, most symptoms other than that were improved when the course get longer. The results suggest that patients with chronic asthma who were receiving Tianjiu Therapy in Sanfu Days consecutively

for three years can be benefited better.

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