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## Home-based traditional Chinese medicine nursing interventions for discharged patients with COVID-19: A rapid review of Chinese Guidelines

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**Short title:** Home-based TCM for patients with COVID-19

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### Abstract

**Background:** The aim of this review is to comprehensively summarize and analyze the current guidelines on home-based traditional Chinese medicine (TCM) nursing interventions for discharged patients with COVID-19.

**Methods:** Eight data sources were searched until June 28, 2020. The frequency of home-based TCM nursing interventions and the use of specific acupuncture points recommended in Chinese guidelines for discharged COVID-19 patients were computed and analyzed.

**Results:** In total, we identified five Chinese guidelines that provide for home-based TCM nursing interventions for discharged patients with COVID-19. Moxibustion and acupressure were singled out as the most frequently used of the 11 home-based TCM nursing interventions recommended by these guidelines. RN12 and ST36 were the two most promoted acupuncture points for moxibustion and acupressure interventions for these patients.

**Conclusions:** The present review showed the important role of home-based TCM nursing interventions for discharged COVID-19 patients. However, direct evidence of their efficacy is still insufficient.

**Keywords:** COVID-19; Nursing; TCM

## 1. Introduction

The novel coronavirus SARS-CoV-2 has resulted in a global pandemic of coronavirus disease 2019 (COVID-19).<sup>1</sup> Given the absence of a vaccine or effective antiviral drugs against SARS-CoV-2, traditional Chinese medicine (TCM) has been highly recommended in Chinese treatment guidelines for COVID-19.<sup>2</sup> According to a recent report from the National Administration of Traditional Chinese Medicine, TCM coupled with Western medicine therapy was found to have a superior effect on improving the clinical symptoms, decreasing the length of hospital stay, and preventing the deterioration of the condition of patients with COVID-19<sup>3</sup> than the recourse to Western medicine alone.

Thanks to the successful implementation of integrated TCM and Western medicine therapy, a total of 78,580 patients in China have been cured and discharged from the hospital as of April 26, 2020. However, a large number of cured patients, especially those who were affected by severe forms of the disease, may continue to experience fatigue, sleep dysfunction, ache, respiratory dysfunction, anxiety, insomnia and lack of appetite even after their discharge from the hospital. Approximately 84.3% of them are in urgent need of professional TCM rehabilitation.<sup>4</sup> However, the public health crisis caused by the outbreak of the novel coronavirus has prevented these discharged patients from consulting TCM physicians at rehab outpatient clinics, since they are isolated at home. Therefore, home-based TCM nursing interventions have become an important method to promote the rehabilitation and health of COVID-19 discharged patients, particularly under the current circumstances.

Home-based TCM nursing interventions are family-centered non-invasive self-care technologies, which are established under the guidance of the basic theory of TCM.<sup>5</sup> TCM nursing interventions are very popular and highly favored by the Chinese population owing to their advantages of self-administration, simplicity, convenience, effectiveness, and low cost.<sup>6</sup> Thus, they are very suitable for discharged patients with COVID-19 who are isolated at home. Notably, home-based TCM nursing interventions have been used successfully in previous epidemic outbreaks, including SARS<sup>7</sup> and H1N1 influenza.<sup>8</sup>

Recently, Ang et al.<sup>9</sup> demonstrated the therapeutic effectiveness of TCM in treating patients with COVID-19 at the recovery stage. The aim of this review is to further summarize and analyze the current guidelines on home-based TCM nursing interventions for discharged patients with COVID-19.

## **2. Methods**

### *2.1. Search methods for the identification of guidelines*

In order to identify guidelines for home-based TCM nursing intervention, the following data sources were searched from their inception until June 28, 2020:

- Chinese databases: Chinese SinoMed, China National Knowledge Infrastructure (CNKI), Wan-Fang Data, WeiPu.
- English-language databases: WHO COVID- 19 Global Research Database, COVID-19 Open Research Dataset (CORD-19), Embase, PubMed, and International Practice Guidelines Registry Platform.

- Official government websites of 23 provinces, four province-level municipalities and five autonomous regions in mainland China. Thus, a total of 32 province-level guidelines were searched.
- Department of Health of the Hong Kong Special Administrative Region.
- Serviços de Saúde of the Macau Special Administrative Region.
- Taiwan Centers for Disease Control.
- Official websites of university hospitals in Wuhan.
- Official websites of National Administration of Traditional Chinese Medicine and local Administration of Traditional Chinese Medicine

The search terms were “COVID-19,” “SARS-COV-2,” “novel coronavirus,” “coronavirus disease 2019,” “severe acute respiratory syndrome coronavirus 2,” “2019-nCoV,” “2019-CoV,” and specific TCM nursing interventions (“TCM nursing,” “moxibustion,” “cupping,” “*gua sha*,” “acupressure,” “fumigation,” “TCM exercise,” etc.). Supplementary 1 shows the detailed search strategy. Any indexed terms equivalent to “COVID-2019” and “TCM nursing interventions” were also included in order to extend coverage.

## 2.2. Eligibility criteria

Only guidelines regarding home-based TCM nursing interventions for discharged patients with COVID-19 were included in this study. Discharged patients are defined as meeting the following discharge criteria:<sup>10</sup> (1) normal body temperature for more than 3 days; (2) significant improvement of the respiratory symptoms, with the chest

radiograph showing apparent absorption of the inflammation; and (3) two consecutive negative results on the real-time reverse transcriptase polymerase chain reaction (RT-PCR) test results for SARS-CoV-2 (at least 24 hours apart). As the study focuses on TCM nursing interventions for discharged patients who are convalescing at home, guidelines concerning healthy people or inpatients at the rehabilitation stage were not taken into consideration. Additionally, guidelines that only address pharmacological TCM therapies were excluded, as were those which featured only health care provider-led TCM rehabilitation measures. Moreover, since TCM nursing techniques were identified on the basis of the guidelines of the National Administration of Traditional Chinese Medicine, some regional variants (Tibetan medicine, Mongolian medicine, Miao medicine, etc.) were not included in this study.

### *2.3. Data extraction and analysis*

Two reviewers (Xu and Shi) conducted data extraction independently in accordance with a pre-defined standard data extraction sheet, cross-checked the results and examined any discrepancies. Inconsistent opinions were resolved via a discussion. If no consensus was achieved, the third reviewer (Sun) arbitrated the disagreements. The following information was extracted from the guidelines: (1) guideline sources; (2) types of TCM nursing interventions; (3) details of the interventions (session length, duration and frequency); (4) selection of acupuncture points and meridians. The frequency with which particular home-based TCM nursing interventions and acupuncture points are recommended in Chinese guidelines for discharged patients with

COVID-19 were computed and analyzed.

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### 3. Results

In total, five guidelines on home-based TCM nursing interventions for discharged COVID-19 patients were identified. Two of these were issued by province-level municipalities (Beijing and Tianjin), one by the authorities of the Sichuan province, one by the National Administration of Traditional Chinese Medicine, and the remaining one by the University Hospital in Wuhan city. The detailed flow chart of the selection process is shown in Figure 1.

The details of TCM nursing interventions are summarized in Table 1; they include moxibustion, acupressure, auricular acupressure, *gua sha*, cupping, foot reflexology, fumigation, perfumed TCM bags, dietary guidelines, tai chi exercise and *baduanjin* exercise. Moxibustion and acupressure were the most frequently used interventions (as illustrated by the size of the node in Supplementary 2) and play a central role in this network (Supplementary 2).

The selection of acupuncture points for moxibustion and acupressure are summarized in Table 1. Most of the recommended points lie in the hand *taiyin* lung meridian, the foot *taiyang* bladder meridian, the foot *yangmin* stomach meridian and *du* meridian. RN12 and ST36 were the two most frequently used acupuncture points in these interventions for discharged patients with COVID-19 (Supplementary 3). Additionally, CO16, CO14, CO13, CO4 and TF4 were found to be the five auricular acupuncture points with the highest frequency of use in auricular acupressure for these patients (Supplementary 3).

### 4. Discussion

#### *4.1. Summary of the main results*

In total, we identified five Chinese guidelines that provide for home-based TCM nursing interventions for discharged COVID-19 patients. Moxibustion and acupressure were identified as the most frequently used methods among the 11 home-based TCM nursing interventions prescribed by these guidelines. In addition, RN12 and ST36 were the most recommended acupuncture points for moxibustion and acupressure for these patients.

#### *4.2. Limitations of the review*

Firstly, although we have reviewed and summarized the available guidelines regarding home-based TCM nursing interventions for discharged patients with COVID-19, direct evidence of their effectiveness is still insufficient. Secondly, most of the guidelines included in this study provided incomplete information on the details of each home-based TCM nursing intervention. Thirdly, we were unable to find relevant guidelines which specifically target pediatric COVID-19 patients. Lastly, we limited our search to a period ending on June 28, 2020. As a result, information that has been updated by the Chinese government since that date in this review.

#### *4.3. Comparison with existing literature*

Previously, a single review performed by Zhang et al.<sup>11</sup> provided suggestions regarding home-based TCM nursing interventions for discharged patients with COVID-19. Notably, it recommended five particular interventions (moxibustion, acupuncture,

Chinese *tuina*, auricular acupressure and TCM exercises), which is partially consistent with the results of our review. However, Zhang et al.'s review<sup>11</sup> referenced classic Chinese texts only, rather than evidence-based guidelines. Thus, important TCM nursing interventions such as auricular acupressure or *gua sha* were omitted. In comparison, our review provides more detailed information on the recommended acupuncture points and the frequency of home-based TCM nursing interventions, which may help patients perform these self-administrated interventions at home.

#### 4.4. Implications for clinical practice

According to our results, moxibustion and acupressure play dominant roles amongst the 11 home-based TCM nursing interventions recommended for discharged patients with COVID-19. Moxibustion may effectively strengthen the body's ability to restore *yang* and promote the primary *Qi*. Although no randomized controlled trial was carried out in their study to ascertain the effectiveness and safety of these interventions for discharged COVID-19 patients, Huang et al.<sup>12</sup> revealed that moxibustion may relieve anxiety and improve the symptoms of anorexia and shortness of breath for inpatient with mild forms of the disease. Moreover, the previous systematic review and clinical trials provided indirect evidence of the effectiveness of acupressure in the treatment of allergic respiratory diseases<sup>13</sup> and severe viral pneumonia.<sup>14</sup>

The most frequently selected acupuncture points were found to be ST36 and RN12, *shu* and *mu* respectively, which are part of the stomach channel. Thus, moxibustion or acupressure at ST36 and RN12 can strengthen the spleen and stomach *Qi* so as to

improve the appetite of the patients. In summary, these specific interventions may have a beneficial effect on discharged patients with COVID-19. However, we cannot provide a recommendation as there still lack randomized controlled trials (RCTs) examining their effectiveness in the treatment of these patients.

#### *4.5. Implications for research*

Further well-designed RCTs on home-based TCM nursing interventions for discharged patients with COVID-19 are urgently needed. Incidentally, several RCT protocols have recently been incorporated into the Chinese clinical trial registry (<http://www.chictr.org.cn/>). The completion of clinical trials will provide additional evidence, which will facilitate the generalization of results and the rational application of home-based TCM nursing interventions for discharged COVID-19 patients.

It is worth noting that current TCM nursing research still lacks evidence-based nursing concepts, and high-quality clinical trials are scarce in this field.<sup>5</sup> Thus, ongoing RCTs regarding home-based TCM nursing interventions for discharged patients with COVID-19 should strictly follow the Consolidated Standards of Reporting Trials (CONSORT) statement.<sup>15</sup> Considering the nature of TCM nursing interventions, participant blinding was not always possible. However, statistician and outcome assessor blinding should be implemented in order to minimize the risk of detection bias. Moreover, researchers studying TCM nursing should also refer to a core outcome set for COVID-19 (COS-COVID) in setting clinical outcomes.<sup>16</sup>

In conclusion, this review has shown the important role played by home-based TCM

nursing interventions for discharged COVID-19 patients. However, high-quality RCTs are needed to provide more direct evidence regarding their effectiveness and safety.

### **Author contributions**

Xiao Xu: Conceptualization, Data curation, Formal analysis, Funding acquisition, Methodology, Resources, Software, Validation, Visualization, Writing - original draft, and Writing - review & editing. Ya-Nan Shi: Conceptualization, Data curation, Formal analysis, Software, Validation, Visualization, Writing - original draft. Rong-Yun Wang: Data curation, Formal analysis, Software, Validation, Visualization. Ting Liu: Data curation, Formal analysis, Software, Validation, Visualization. Jingming Xu: Data curation, Formal analysis, Software, Validation, Visualization. Wen Mao: Data curation, Formal analysis, Software, Validation, Visualization. Qiu-Hua Sun: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Funding acquisition, Writing - review & editing.

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### **Ethical statement**

No ethics committee approval was required

**Conflict of interest:** The authors declare no conflict of interest

### **Data availability**

Data will be made available upon request.

### **Declaration of Conflicting Interests**

The authors declare that there is no conflict of interest.

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We would like to appreciate and respect all nurses, doctors and TCM practitioners on the coronavirus front line.

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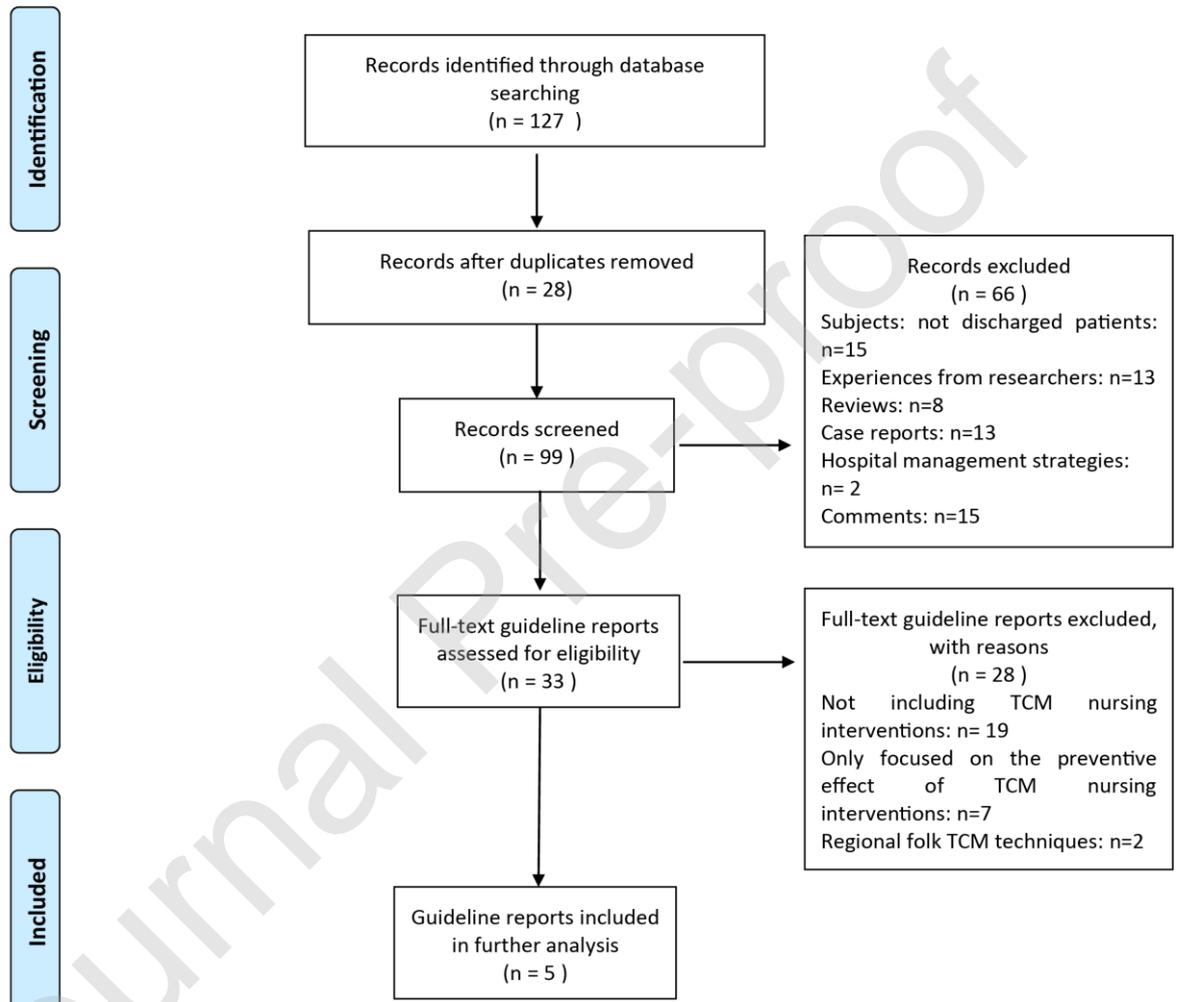
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## Figure legends

Figure 1. Flow chart of the selection process.



**Table 1 Home-based TCM nursing interventions recommendation from guidelines**

Guideline Sources	Types of TCM nursing techniques	Acupuncture points and meridians selection	Details of Intervention
National Administration of Traditional Chinese Medicine	Moxibustion	DU14, BL13, RN12, RN13, BL17, ST36, LU6	Not reported
	Acupressure	LU9, RN17, LU1, BL13, BL23, BL25, LU7 RN12, ST36 Cough and dry cough: Add on LU11 and LU5	Not reported
	Auricular Acupressure	CO16, CO14, CO18, TF4, AT3, CO13, CO4, CO7, AH6a	Not reported
	Gua Sha	Hand Taiyin lung meridian, Hand Yangming large intestine meridian and Foot Taiyang bladder meridian	Not reported
	Cupping therapy	BL13, BL43, BL20, BL23, DU14	Not reported
Beijing	Moxibustion	DU14, BL13, BL17, LU6, LI 11, RN12, RN8, ST25, ST36, BL26, RN6.	Indirect moxa (per acupuncture point = 10-15 min, once daily).
	Auricular Acupressure	CO16, CO14, CO18, TF4, CO13, CO4, CO7, AH6a, AT <sub>1,2,4i</sub> , TG <sub>2p</sub> .	1-2 minutes each time, 2 or 3 times/day, 2 times /week, 2 weeks /session.
	Acupressure	LU9, RN17, LU1, BL13, BL23, BL25, LU7 RN12, ST36, PC6, LU6, LI11, RN12, RN17, ST25, ST36, BL24, BL26	1 min for each point, 2 times/day, 5 days/session.
	Gua Sha	Hand Taiyin lung meridian, Hand Yangming large intestine meridian and Foot Taiyang bladder meridian	10-20 times each time, 20 min per session
	Foot Reflexology	KI1	Not reported
	Cupping	DU14, BL13, ST36, BL20, BL23, DU14	Not reported
Si Chuan	Acupressure	LU1, RN17, RN12, ST25, BL26, ST36, SP6, PC6, DU20	50-100 times/acupuncture point, <i>Deqi</i> , twice/day
	Moxibustion	RN12, ST25, BL26, ST36, SP6, RN4	Indirect moxa (per acupuncture point = 10 min, once daily).
	Auricular Acupressure	CO16, CO14, CO13, CO4, TF4, AH6a	Not reported
Tongji Hospital affiliated to Huazhong University of Science and Technology	Fumigation	/	radix isatidis 10g, Acorus tatarinowii Schott 10g, cyrtomium fortune 10g, honeysuckle 15g.
	Perfumed TCM bags	/	rhizoma atractylodis 10g, mugwort 10 g, Acorus tatarinowii Schott 10g, Mentha haplocalyx 10g, Agastache rugosus 10g
	Acupressure	DU14, BL26, BL24, RN12, ST36	Not reported
	Moxibustion	DU14, BL26, BL24, RN12, ST36	Not reported
	Dietary guidelines	/	turnip radish, asparagus, dandelion, houttuynia cordata, tremella
	Taichi exercise	/	Not reported
	Baduanjin exercise	/	Not reported
Tian Jing	Dietary guidelines	/	Poria cocos, Chinese yam, pear, tremella
	Taichi exercise	/	Not reported
	Baduanjin exercise	/	Not reported
	Acupressure	LU5, ST36, SP9, SP6	30s for each point, 2-3 times/day.

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