

ORIGINAL RESEARCH ARTICLE

Sujok as an alternative therapy to reduce dyspnea in patients with respiratory problems

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Abstract

The management of dyspnea has received little attention as compared to other potentially severe symptoms of the disease, such as acute and chronic pain. The previous case reports indicated that *Sujok* therapy can alleviate dyspnea in a short time. This study aimed to determine whether *Sujok* therapy could reduce dyspnea symptoms in patients with oxygen saturation of less than 96%. *Sujok* originated from the Korean language, which consisted of the words *Su* and *Jok*, denoting hand and foot, respectively. *Sujok* therapy involves manipulating the hands or feet through massaging, coloring, or attaching seeds, magnets, or needles. This quasi-experimental study involved 34 males and 26 females with oxygen saturation of < 96% and experienced dyspnea with a grade of more than 2 on the Likert scale (1 – 5). Respondents were divided into an intervention group (IG) ($n = 30$) and a control group (CG) ($n = 30$), where IG was given the *Sujok* therapy. Measurements were taken for both groups at 0, 5, 15, and 30 min. The study reported mean ages of 55.6 ± 13.49 and 60.63 ± 9.26 in CG and IG, respectively. The increase in oxygen saturation was statistically significant in the overall measurement time in IG ($P < 0.01$). After 30 min, the average grade of dyspnea was 3 (moderate) for CG and 2 (mild) for IG. In CG, dyspnea decreased significantly at 30 min by 0.185 ($P = 0.001$; $P < 0.05$), whereas in IG, dyspnea decreased significantly at 5 min by 0.649 ($P < 0.01$). In conclusion, *Sujok* therapy can increase oxygen saturation and reduce the dyspnea grade in patients with respiratory problems.

Keywords: *Sujok* therapy; Dyspnea; Respiratory problem

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1. Introduction

Dyspnea is a complex symptomatic condition and is influenced by several factors, such as environmental, physiological, and psychological factors,¹ inclusive of previous experiences, emotions, beliefs, values,² and diseases.³ According to the American Thoracic Society, dyspnea is defined as a subjective experience associated with discomfort in breathing that causes qualitatively different sensations with varying intensities.¹ There are different dyspneic sensations, such as tachypnea, rapid breathing, increased work of breathing, chest tightness, and air hunger.²

Dyspnea is commonly caused by heart and lung diseases, such as pneumonia, chronic obstructive pulmonary disease (COPD), asthma, heart failure, and coronary heart disease,³ which account for up to 85% of dyspnea cases.⁴ Other common causes

of dyspnea are obesity,⁵ exercise-induced dyspnea,⁶ pregnancy,⁷ and psychological pressure such as anxiety.^{3,8} Likewise, dyspnea is considered to be the most severe symptom experienced by patients with lung cancer.⁹

While it may be difficult to gauge the prevalence of dyspnea, several studies have reported that up to 8.4% of visits to the emergency department and 2.5% of all doctor visits require treatment for dyspnea.¹⁰ In addition, it was reported that about 30% of patients older than 65-years-old had difficulty breathing when walking.¹¹ Likewise, the prevalence of dyspnea is as high as 32% for those over 70 years old.¹²

Healthcare workers are responsible for relieving the symptoms of dyspnea through comprehensive management of the disease,¹³ which involves identifying the cause of dyspnea, treating it appropriately, and optimizing the recovery and improvement of dyspnea symptoms.³

Recent research has focused on alternative therapies to treat dyspnea (e.g., fan therapy, traditional Chinese medicine [TCM], music therapy, hypnosis, yoga, tai-chi, and Qigong), but most of these therapies require a long duration, and the corresponding studies lack the utilization of objective measurements (e.g., oxygen saturation measurement) to determine the effect of therapy on dyspnea.

Nonetheless, the management of dyspnea is often overlooked as compared to other potentially severe symptoms of respiratory diseases, such as acute and chronic pain, which could be attributed to the patients' low likelihood of reporting the dyspnea symptoms, as well as the complex mechanism of terminal dyspnea.² In addition, studies often exclude patients with dyspnea,² and dyspnea is not considered an outcome in various interventions.¹⁴ It was also reported in a study that the palliative care team in an intensive care unit rarely consulted patients with respiratory problems.¹⁵ A recent case study reported that *Sujok* therapy could remarkably reduce dyspnea in patients with COVID-19 within 27 min, and it warranted further studies with a larger sample size and a more rigorous research method to validate its findings. Herein, the present study aimed to evaluate the efficacy of *Sujok* therapy to reduce dyspnea symptoms in patients with an oxygen saturation of <96%.

2. Methods

2.1. Study design

This quasi-experimental study was conducted with a control group (CG) in a hospital in Indonesia. The primary and secondary objectives of this study were to evaluate the effects of *Sujok* therapy on the severity of dyspnea in patients and on oxygen saturation levels, respectively. This study received an ethical approval number (KE/FK/0118/EC/2021) from the Medical and Health Research Ethics Committee of the

Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada-Dr. Sardjito General Hospital, Yogyakarta, Indonesia. This study was registered for a clinical study (ID: 202103010) in the research repository at Universitas Gadjah Mada on March 24, 2021. A research assistant was assigned to collect patient data after obtaining patient consent from all patients before the study.

2.2. Participants

The participants of this study were selected from two different wards: one ward for the CG and the other for the intervention group (IG). The inclusion criteria were oxygen saturation < 96%, at least one breathing-related symptom (e.g., dyspnea, cough, excess sputum production, and chest tightness), and a grade > 2 on the Likert scale (i.e., 1 – 5; 1 = No symptoms; 2 = Mild symptoms; 3 = Moderate symptoms; 4 = Severe symptoms; and 5 = Very severe symptoms). The exclusion criteria were those who could not respond to the researcher. Patients from these two wards were approached for recruitment based on the inclusion and exclusion criteria, and the recruitment process continued until the number of respondents in each group reached 30. The recruitment process was performed by members of the research team and a lung specialist, and the patients were prospectively considered if they had been in these wards for treatment. No patients were excluded from the recruitment process.

2.3. Study procedures

A Likert scale was used to measure the severity of dyspnea as one of the symptoms of respiratory problems. This instrument was tested with five respondents to determine whether they understood the statement. Subsequently, 52 respondents were involved in the validity and reliability tests in August 2021 (i.e., $r = 0.268$ and Cronbach's $\alpha = 0.65$). The Likert scale was then used to collect data from September 2021 to February 2022 at a hospital in Central Java, Indonesia.

During the data collection process, oxygen saturation and symptoms were measured at 0, 5, 15, and 30 min in the CG. In the IG, after oxygen saturation and symptoms were measured at 0 min, the respondents were given *Sujok* therapy, which took approximately 3 min. Subsequently, oxygen saturation and symptoms of respiratory problems were measured at 5, 15, and 30 min post-therapy. The *Sujok* therapy was performed as follows:¹⁶

- (i) Massage the areas marked in red and green according to the direction of the arrows (i.e., from inside to the top, from bottom to top, and from outside to the top) (Figure 1) 30 times with a roller-shaped probe (Figure 2);
- (ii) Color areas of the hands according to Figure 1.
- (iii) Attach fenugreek seeds to the colored areas with tape.



Figure 1. The area of the hand where the *Sujok* therapy is performed. Permission was obtained for reusing the figure.



Figure 2. Probe for massage.

An oximeter was then placed on the finger of each patient at 0, 5, 15, and 30 min. Positioning the oximeter in the same area is important in this study to avoid measurement bias. Likewise, the accuracy of the oximeter could decrease due to the presence of skin pigmentation, high light intensity, excessive patient movement, decreased perfusion, the presence of hemoglobin or carboxyhemoglobin, intravascular dyes, a decrease in saturation below 83%,¹⁷ and the presence of nail polish.¹⁸

All respondents, both in the control and IGs, received standard treatment as defined in the hospital's care management protocol.

2.4. Statistical analysis

The collected data were verified and subsequently analyzed using paired *t*-test.

3. Results

3.1. Characteristics of respondents

The number of respondents in the control and IGs was 30 people each. The mean age of respondents in the intervention and CGs was 60.63 ± 9.26 and 55.6 ± 13.49 years, respectively. There were no differences in age,

Table 1. The respondents' age, gender, and job status (n=30)

Variable	Frequency		Intervention group		Control group		Sig (2-tailed)
	n	%	n	%	n	%	
Age							0.336
21 – 30	1	1.7	-	-	1	3.3	
31 – 40	3	5.0	1	3.3	2	6.7	
41 – 50	9	15.0	4	13.3	5	16.7	
51 – 60	19	31.6	9	30.0	10	33.3	
61 – 70	23	38.3	14	46.7	9	30.0	
71 – 80	4	6.7	2	6.7	2	6.7	
81 – 90	1	1.7	-	-	1	3.3	
Gender							0.605
Female	26	43.3	12	40.0	14	46.7	
Male	34	56.7	18	60.0	16	53.3	
Job-status							0.676
Housewife	22	36.6	11	36.7	11	36.7	
Entrepreneur	19	31.6	11	36.7	8	26.7	
Labor	10	16.7	4	13.3	6	20.0	
Public servant	1	1.7	1	3.3	-	-	
Others	4	6.7	1	3.3	3	10.0	
Unemployed	4	6.7	2	6.7	2	6.7	

gender, and job status between the intervention and CGs (Table 1). Further characteristics related to the medical diagnosis of each respondent are displayed in Table 2.

3.2. The result of *Sujok* therapy

The results indicated that the average oxygen saturation in the IG increased at 5, 15, and 30 min until the normal range of oxygen saturation (>95%) (Figure 3). Meanwhile, in the CG, the average oxygen at 30 min was still not in the normal range (< 96%) (Figure 3).

Statistical analysis revealed that there was a significant increase in oxygen saturation in the IG for each measurement ($P < 0.05$) (Table 3). Meanwhile, a significant increase in the CG only occurred at the 15-min measurement ($P < 0.05$).

Measurements with the dyspnea scale (Figure 4) revealed a decreasing grade in the IG for each consecutive measurement. In contrast, the CG displayed an approximate grade of 3 (mild) for measurements at 5, 15, and 30 min.

Statistical analysis of dyspnea for both the control and IGs is displayed in Table 4. The grade reduction was statistically significant at 5 min for the IG ($P < 0.05$) and at 30 min for the CG ($P < 0.001$).

Table 2. Medical diagnosis of the respondents (n=30)

Control group	Intervention group
Lung cancer and pleural effusion (sinistra)	Pulmonary tuberculosis and dyspnea
ST-elevation myocardial infarction (STEMI) post-Streptase, pulmonary edema-mixed pneumonia, and diabetes mellitus type II	Congestive heart failure, diabetes mellitus, and pneumonia
Bacterial pneumonia, septic shock, disseminated intravascular coagulation (DIC), and thrombocytopenia	Fever, suspected leptospirosis, hypokalemia, and hyponatremia
Chronic kidney disease, pleural effusion, and pulmonary edema	Pneumonia and pleural effusion
Pneumonia and diabetes mellitus	Asthma, atrial fibrillation, rapid ventricular response, and a history of breast cancer
Lung cancer and pleural effusion	Chronic kidney disease, fever, and vomitus
Acute decompensated heart failure, chronic kidney disease, and pneumonia	Intestinal tuberculosis and hepatitis
Bradycardia and cephalgia	Chronic kidney disease and pleural effusion
Respiratory failure (Type 1) and hypertension	Neurogenic shock, spinal cord injury, atrial fibrillation, normal ventricular response, and congestive heart failure
Pulmonary tuberculosis	Suspected pulmonary tuberculosis and Differential diagnosis pneumonia
Mediastinal tumor	Dyspnea and chronic kidney disease
Lung cancer	Ascites and hepatocellular carcinoma
Anasarca edema and congestive heart failure	Post-laparotomy exploration Et causa gastric perforation
Respiratory failure (Type 1) and hypertension	Hemorrhagic stroke, diabetes mellitus, and mild head injury
Lung cancer	Congestive heart failure, dyspnea, and diabetes mellitus
Acute asthma	Vomitus and hyperglycemia
Hematochezia and asthma	Open fracture femur sinistra and fracture on clavícula
Pleural effusion, ileus obstruction, electrolyte imbalance, and renal insufficiency	Asthma
Post-laparotomy, liver repairment, and anemia	STEMI, history of supraventricular tachycardia, and diabetes mellitus
Suspected leptospirosis and chronic kidney disease	Hemiparesis dextra and cephalgia
Atrioventricular (AV) block and electrolyte imbalance	Post-proximal femoral nail anti-rotation
Decubitus ulcer, hypertension, and cerebrovascular accident	Hemorrhagic stroke and post-craniotomy
Supraventricular tachycardia and suspected abscess cerebra	Abdominal pain and melena
Observation dyspnea, pneumonia, and COVID-19	Abscess on the mandibula and COVID-19
COVID-19, pneumonia, non-ST-segmental elevation myocardial infarction (NSTEMI), and diabetes mellitus	COVID-19, pneumonia, and a history of depression
Discharged COVID-19, acute kidney injury, and a history of cerebrovascular accident	COVID-19 and suspected mass in the right lung
COVID-19, sepsis, anorexia, and diabetes mellitus	COVID-19, diabetes mellitus, ischemic heart disease, and dyspnea
Diabetes mellitus, hypoglycemia, vertigo, and COVID-19	COVID-19, chronic kidney disease, and pleural effusion
COVID-19, rectal cancer, pneumonia, and diabetes mellitus	COVID-19, pulmonary tuberculosis, and pneumonia
COVID-19 and Parkinson's	COVID-19, chronic kidney disease, and cellulitis

Abbreviations: AV: Atrioventricular; DIC: Disseminated intravascular coagulation; NSTEMI: Non-ST-segmental elevation myocardial infarction; STEMI: ST-elevation myocardial infarction.

4. Discussion

Our results indicated that there was no difference between the two groups in terms of age, gender, and job status. Since this study did not focus on a specific diagnosis as an inclusion criterion but rather on whether the patient had

respiratory problems characterized by oxygen saturation below normal standards (<96%), the patient's medical diagnoses varied greatly, where the respondents had more than one medical diagnosis. The multiple diagnoses for each respondent validated that dyspnea is a multidimensional symptom due to various mechanisms that occur.²

This research observed that most respondents (approximately 84%) had heart- and/or lung-related problems, which was consistent with the results of a systematic review involving 10 longitudinal studies that stated the involvement of dyspnea in heart and lung problems.¹⁹ Another study stated that asthma, COPD, heart failure, pneumonia, and coronary arteries were among the 85% most common causes of dyspnea.⁴ Severe dyspnea also occurs in patients with lung cancer.⁹

Our results displayed a statistically significant decrease in the dyspnea scale for both the CG and IGs. However, the statistically significant decrease occurred more rapidly

in the IG (5 min) than in the CG (30 min). Although both groups exhibited a significant decrease, the average severity of dyspnea symptoms in the IG was lower at grade 2 (mild), while the CG was at grade 3 (moderate). Notwithstanding, the Likert scale measurement was considered subjective because variations in sensation and intensity were noted in the patient reports.¹⁴

Therefore, dyspnea was subsequently measured objectively with an oximeter. The oximeter has a sensitivity of 92% and a specificity of 90% when detecting hypoxia with a 92% oxygen saturation limit.²⁰ Notably, dyspnea is also one of the symptoms that indicate the presence of hypoxemia. A recent study reported that dyspnea is not implicated in all hypoxemia, and this type of hypoxemia is called “silent hypoxemia”.²¹ Oxygen saturation is often considered a fifth vital sign measurement.¹⁷ Oxygen saturation is considered abnormal if it is <95%,²² while other references indicated that normal oxygen saturation ranges around 96 – 100% at sea level.²³

Meanwhile, another reference stated that hypoxemia is defined by oxygen saturation of less than 90%.²³ For more severe conditions, cyanosis, a form of hypoxemia, may occur when the oxygen saturation decreases to 67%, but cyanosis is not always visible during physical examination. In this regard, the use of oximetry may be beneficial.¹⁷

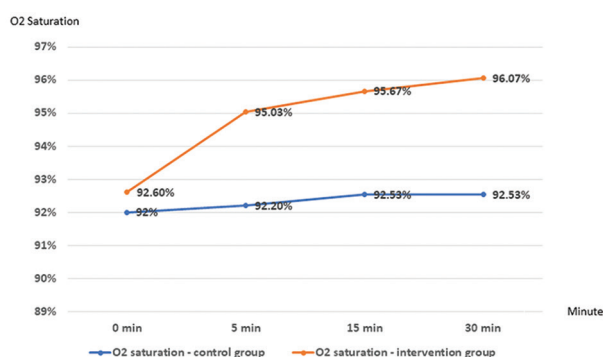


Figure 3. Graph of the average oxygen saturation in the control and intervention groups.

Table 3. Comparison of oxygen saturation between control and intervention groups

Group	Paired differences				<i>t</i>	<i>df</i>	Sig (2-tailed)	
	Mean	Standard deviation	Standard error mean	95% Confidence interval of the difference				
				Lower				Upper
Control								
Pair 1								
O ₂ (%) 0 – 5 min	0.200	1.375	0.251	−0.313	0.713	0.797	29	0.432
Pair 2								
O ₂ (%) 0 – 15 min	0.533	1.332	0.243	0.036	1.031	2.193	29	0.036*
Pair 3								
O ₂ (%) 0 – 30 min	0.533	1.525	0.278	−0.036	1.103	1.915	29	0.065
Intervention								
Pair 1								
O ₂ (%) 0 – 5 min	2.433	1.478	0.270	1.881	2.985	9.016	29	0.000*
Pair 2								
O ₂ (%) 0 – 15 min	3.067	1.596	0.291	2.471	3.663	10.525	29	0.000*
Pair 3								
O ₂ (%) 0 – 30 min	3.467	1.833	0.335	2.782	4.151	10.357	29	0.000*

Note: *Denotes significance ($P < 0.05$).

In the present study, the oxygen saturation of the IG increased and reached the normal range after 30 min. In contrast, the oxygen saturation remained below the normal range after 30 min for the CG. The results demonstrated that *Sujok* rapidly increased oxygen saturation, as evidenced 5 min after the first measurement or 2 min after completion of therapy in the IG. Therefore, despite the subjective assessment of dyspnea by the patient, the increase in oxygen saturation as measured by the oximeter was an objective measurement and provided strong evidence that *Sujok* therapy can increase oxygen saturation in a short time.

However, there was also the possibility of errors when reading the oximeter. For example, the presence of pigmentation or nail polish where the oximeter is installed could lower the oximeter reading, which corresponds to a decreased oxygen saturation.²⁴⁻²⁶ To prevent this, we placed the oximeter on the same finger and used the same instrument as earlier literature stated that the

estimated value of oxygen saturation is based on the type of instrument used to measure.²¹

In addition, there were no patients with oxygen saturation below 83%, which validated the accuracy of the oximeter because inaccurate oximeter readings may typically indicate oxygen saturation below 83%.¹⁷ Other references have also reported that pulse oximeter readings of 70% may not be accurate as compared to the gold standard of using blood gas measurements.²³

Other studies have investigated the use of fan therapy to reduce dyspnea symptoms.^{27,28} Fan therapy is applied directly at the feet and face, but it was reported to only lower the dyspnea score to baseline with no reduction in dyspnea after 60 min of therapy. Another similar study involved a larger sample of 20 patients who underwent fan therapy to the face or feet for 5 min. The results revealed that the reduction in dyspnea was significantly higher in fan-to-face than in fan-to-leg therapy. Although both treatment methods reported improvements on the dyspnea scale, there was no significant difference between the SpO₂ (peripheral oxygen saturation levels) before and after treatment.²⁸ Notably, SpO₂ measurements may have higher values in the presence of bias in the data collected from the respondents.

Another recent study stated that the duration of fan therapy is generally 5 min. Although as many as six studies (60%) reported improvements in dyspnea symptoms with fan therapy, results from fan therapy were considered subjective data from patients and not objective measurements (e.g., SpO₂ measurements through blood gas analysis or using oximetry).²⁹

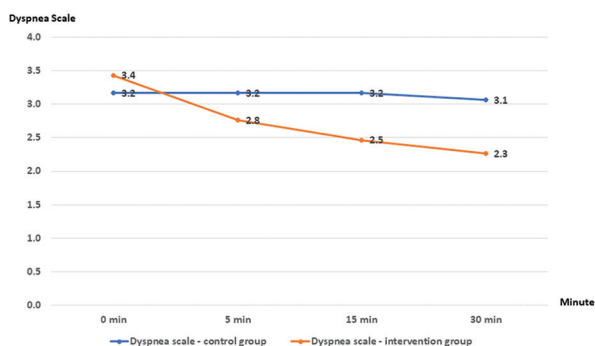


Figure 4. Dyspnea scale in the control and intervention groups.

Table 4. Comparison of the scale of dyspnea between the control and intervention groups

Group	Paired differences					<i>t</i>	<i>df</i>	Sig (2-tailed)
	Mean	Standard deviation	Standard error mean	95% confidence interval of the difference				
				Lower	Upper			
Control								
Pair 3								
Dyspnea at 0 – 30 min	−0.18463	0.28774	0.05253	−0.29208	−0.07719	−3.515	29	0.001*
Intervention								
Pair 1								
Dyspnea at 0 – 5 min	−0.64860	0.70693	0.12907	−0.91257	−0.38463	−5.025	29	0.000*
Pair 2								
Dyspnea at 0 – 15 min	0.17950	0.86919	0.15869	−0.14506	0.50406	1.131	29	0.267
Pair 3								
Dyspnea at 0 – 30 min	−0.00030	0.96380	0.17597	−0.36019	0.35959	−0.002	29	0.999

Note: *Denotes significance ($P < 0.05$).

Other researchers have also studied the use of TCM in dyspnea, such as herbs, acupuncture, and exercise. One respondent with a diagnosis of asthma and COPD received TCM therapy for 4 weeks, which yielded satisfactory results, with the patient no longer experiencing symptoms of dyspnea.³⁰ Unfortunately, the case study did not explain the changes in the dyspnea scale with regard to the intervention period, and the study also did not use oxygen saturation parameters. Therefore, in terms of the dyspnea and oxygen saturation scales, the results could not be compared to this study. In addition, TCM therapy requires more time, effort, and complex materials than *Sujok* therapy, which was performed for approximately 3 min in this study.

There was another study that investigated the use of music to reduce dyspnea. Results of this study also reported that music could statistically reduce dyspnea in the IG, but the hemodynamic measurements of the respondents were not significant.³¹ The result was the same as the fan therapy study, where the subjective results did not correlate with the objective measurements. Similar studies, without objective measurements, reportedly improved dyspneic symptoms (based on subjective data) with glutathione (i.e., oral and intravenous)³² and yoga.³³

Notably, an intervention study utilizing hypnosis therapy has reportedly succeeded in reducing dyspnea, as evidenced by objective (e.g., respiration rate [RR] and SpO₂/arterial oxygen saturation) and subjective (e.g., Borg Score – Visual Analog Scale) measurements, as well as anxiety evaluation (i.e., with STAI-6 questionnaires).³⁴ However, hypnosis therapy took a longer time (15 min) than *Sujok* therapy (~3 min).

Several other alternative therapies have been studied, especially regarding pulmonary rehabilitation in patients with COPD, using mind-body therapy (e.g., yoga, tai-chi, and Qigong)³⁵ and acupuncture, which yielded promising results related to the sensation of shortness of breath.³⁶

In this study, *Sujok* therapy was able to improve oxygen saturation levels (objective data) and dyspnea (subjective data). *Sujok* is a multimodal therapy on the hands and feet, including meditation (Tririgin Smile Meditation [TSM]), massages, applying color, attaching seeds, leaves, or other parts of plants, using needles (e.g., acupuncture), twisting, and magnets. Even when a combination is used, it should not take a long time, as evidenced by the intervention in this study that took only about 3 min to perform.³⁷

One study suggested that the use of a combination of methods for a particular target could have a better effect than using only one method³⁸⁻⁴¹ and could even

improve emotional problems by including twists and putting seeds.⁴¹ The method used in this study consisted of massages, coloring, and seeds. This method was used in dyspnea patients who were suffering from COVID-19, and this method is called therapy for lung correspondence (TKP) and therapy for airway correspondence (TSN).⁴² In this case study, many symptoms improved except dyspnea, and many other targets were treated with different *Sujok* protocols. TKP and TSN methods have reportedly improved dyspnea in patients from grade 10 (the most severe) to 0 (no dyspnea) within 27 min. Unfortunately, this study only involved one respondent, and no measurement of oxygen saturation (objective data) was used to complement the subjective data. Another study reported that TKP and TSN could reduce symptoms in the respiratory tract of COVID-19 patients.⁴³ A total of four male patients with COVID-19 with oxygen saturation of <96% and experienced dyspnea displayed restoration of oxygen saturation to normal and improvement of dyspnea symptoms after therapy within the first 5 min after the first measurement. The findings from these two studies (i.e., Nurjannah¹⁶ and Nurjannah *et al.*⁴²) were consistent with the results of the present study. These reports further validated dyspnea symptom improvement by *Sujok* therapy, with both objective and subjective data.

The first step of *Sujok* therapy involves massages. The stimulation of an affected area will not only relieve the pain but also address the causes of the pain and stabilize the flow of energy in the affected area.³⁷ Furthermore, identifying a particular area for therapy is considered an important step of therapy.³⁷ For an effective treatment, the area of therapy requires proper stimulation,³⁶ and the massage can be either anticlockwise or clockwise and should continue until the pain subsides.³⁷ In this study, the researchers modified the shape and direction of the massage to the outside (from the lungs to the nose). This is essential because dyspnea patients may have excess sputum production, and inward massages (to draw air into the lungs) may accumulate phlegm (and pathogens) in the lower lungs. Likewise, outward massages can expel phlegm (and pathogens) from the respiratory tract.

The second part of *Sujok* therapy is the use of color. Color is a manifestation of cosmic forces that are responsible for life and its healing properties.⁴³ For example, the color red has a strengthening or tonification effect.⁴⁴⁻⁴⁶ Other references also mentioned that red is associated with blood and blood flow and has the property of warmth. If a person is imbued with the color red, the pituitary gland becomes active and increases adrenaline in the blood, thereby stimulating the sensory nerves and increasing the sense of smell, sight, hearing, taste, and touch.⁴³

The color red represents heat energy.⁴⁴ This heat energy is placed in the lung area, which corresponds to the area under the thumb (standard system of *Sujok*) and under the upper joints of each finger on the hands (insect system of *Sujok*). The color red can also stimulate the lungs into hyperactive conditions. The color red in Six Ki is the color of the heart, but the axis is the brown color, representing the lungs.⁴⁴ Although the color red increases the warmth of the chest area and strengthens the heart organ, it becomes a debilitating sedative color for the lungs. In summation, the color red provides warmth, strengthens the heart, and stimulates the lungs.

The color green represents the respiratory tract in both the basic (thumb) and insect (fingers) systems of *Sujok*. Likewise, the color green in Six Ki represents the color of wind energy,⁴⁴ the energy of movement. Imbuing the color green will stimulate movement and, expectedly, reduce the severity of the breathing process. In addition, green is at the axis of the color yellow, which indicates the presence of humidity energy.⁴⁴ Conditions with excess humidity energy encompass the presence of excess sputum or phlegm, especially in respiratory problems. Therefore, the color green not only reduces humidity and prevents phlegm but also increases movement of the respiratory tract for better functionality.

The last step of *Sujok* therapy is the use of seeds. A previous study used green beans in place of seeds,¹⁶ whereas the present study used fenugreek seeds. Green beans require more time to prepare because the buds from the green beans must stick to the skin of patients during seed attachment. In contrast, fenugreek seeds do not have buds, making it easier to attach to the patient's hand. Seeds contain latent energy power that is ready to be used,⁴⁷ and seeds can transfer biological waves of energy to the target area of therapy and also absorb negative energy.⁴⁷

The seeds are applied after the massage and can be left for 24 h for better effects. Ideally, the seeds are massaged again periodically every 3 – 4 h by pressing with a circular motion. The common signs indicating the natural energy effect of the seeds are itching, tingling, reduced pain, and a feeling of warmth in the target areas. After 24 h, the seeds can be replaced with new ones, and the procedure is repeated. This method is effective for long-term chronic diseases that are followed by persistent pain.³⁷

Seeds can be placed at any point of pain or cover all areas of the affected organ. The seed used here must be undamaged, fresh, and capable of germinating.³⁷ Another reference mentioned that seeds can be used to get rid of energy blockages because seeds have a large amount of energy, similar to the natural growth of seeds into big trees with little water and sunlight. It is also recommended

that patients use self-seed therapy at home for at least 2 weeks.⁴⁸

The limitation of this study was that not all respondents who experienced dyspnea had the same medical diagnosis.

5. Conclusion

Sujok therapy can restore oxygen saturation to normal levels and reduce the severity of dyspnea symptoms.

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Conflict of interest

The authors declare no competing interests in this study.

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Ethics approval and consent to participate

This study received an ethical approval number (KE/FK/0118/EC/2021) from the Medical and Health Research Ethics Committee of the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada-Dr. Sardjito General Hospital, Yogyakarta, Indonesia. Written consent was obtained from each of the subjects to participate in the study before data collection.

Consent for publication

Participants gave consent to publish their data.

Availability of data

Data used in this work are available from the corresponding author on reasonable request.

Further disclosure

Part of the findings has been presented in an oral presentation at the International Online Conference

“Ethical Lessons Learned During Epidemic Outbreaks” in 2021.

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